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PROCUREMENT OF 1974
CURRENT INFORMATION

1974 BUDGET EXPLANATORY NOTES

FOREST SERVICE

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FOREST SERVICE

Purpose Statement

The Forest Service is responsible for promoting the conservation and wise use of the country's forest and related watershed lands, which comprise one-third of the total land area of the United States. To meet its responsibility the Forest Service engaged in three main lines of work, as follows:

1. Management, protection, and development of the National Forests and National Grasslands. The 154 National Forests and 19 National Grasslands are managed under multiple use and for sustained yield. Under these principles natural resources of outdoor recreation, range, timber, watershed, and wildlife are utilized in a planned combination that will best meet the needs of the Nation without impairing the productivity of the land.

Direct as well as generated employment for rural residents contribute to community development and to environmental protection and improvement. Gross area within unit boundaries encompasses about 226 million acres in 44 States and Puerto Rico, of which some 187 million acres are under Forest Service administration.

In managing the National Forests, technical forestry is applied to the growing and harvesting of timber crops. Grazing use is managed to obtain proper range conservation along with utilization of the annual growth of forage. Watersheds are managed to regulate stream flow, prevent floods, and provide water for power, irrigation, navigation, and municipalities.

Management includes the development, maintenance, and protection of sites and facilities for the millions of people who visit the National Forests each year for recreation purposes. Emphasis is given to protecting scenic quality while at the same time assuring availability for forest users. Wildlife habitat is managed to provide a suitable land and water environment for both game and non-game wildlife.

Under the multiple use principles most areas are used for, or serve, more than one purpose or objective. For example, about 50 percent of the area within the National Forests serves five different purposes:

- (a) Timber production
- (b) Watershed protection
- (c) Forage production
- (d) Wildlife production
- (e) Recreation

An additional 28 percent serves four purposes in varying combinations. Of the remainder, 21 percent of the total serves three purposes with only 1 percent of the total reserved exclusively for a single purpose, mainly campgrounds and special use areas, such as summer homesites, pastures, and corrals.

The varied interests which frequently conflict and which must be reconciled, and the vast areas covered, clearly require careful planning and skillful management of the National Forest properties to most effectively serve the Nation's people.

The protection of the National Forests includes the control of forest fires, the control of tree disease and insect epidemics, and the prevention of trespass.

The major development activities of the National Forests are reforestation; timber stand improvement; revegetation; construction of roads, recreational facilities, range and other necessary improvements; and land acquisition and exchanges. Each of these activities contributes to the local economy and in many areas serves to improve incomes of the rural poor.

The economic importance of the National Forests and National Grasslands is evident when it is considered that:

- (a) They produced a cash income in fiscal year 1972 of \$350 million. Approximately 65 percent of this amount is credited to the general fund in the Federal Treasury (miscellaneous receipts). The remainder is distributed in accordance with special acts of Congress, including 25 percent to the States or counties in which lands are located, and 10 percent made available for construction and maintenance of the Forest Service system of roads and trails. In addition, to these cash receipts, there are the even greater economic values which result from the processing of end products derived from this utilization of National Forest timber, forage, and minerals. Recreation, wildlife and water result in important economic activity in local, State, and national economies. There are also important intangible values of water, recreation, and wildlife such as the esthetic enjoyment of natural beauty.
 - (b) The area within National Forests boundaries is equivalent to some 10 percent of the area of the continental United States. Over 40 percent of this land is within areas now experiencing economic distress. Proper management, development, and utilization of these lands are important factors in permanent improvement of these local economies. Millions of people who live in and near the National Forests are supported in whole or in part through the economic development arising from the forests and their resources. These resources offer the most favorable basis for developing prosperous and vigorous local economies and communities.
 - (c) The National Forests supplied 11.7 billion board feet of timber in fiscal year 1972 to the Nation's forest products industries. This is expected to increase to 12.2 billion board feet in 1973. Dependence of the forest products industries on National Forest timber continues to increase as the result of depletion of good quality timber on private lands. In some areas, the dependence of local industry on National Forest timber is almost 100 percent. Without this supply some small communities could not exist.
 - (d) About 3.3 million head of domestic livestock (mature animals) are grazed on the National Forests and Grasslands. In many local areas this is a major industry. Without such Federal rangelands the economic activity would be drastically curtailed from currently depressed levels.
 - (e) These lands provide protection to municipal water supplies for nearly all western cities and towns and many in the East, to irrigation water used on about 20 million acres of western lands, and to many streams with water power developments. They provide flood protection to thousands of acres of rich valley lands and help to prevent more rapid siltation of reservoirs and stream channels. A dependable water supply is an important prerequisite for economic and community development.
 - (f) They provide a habitat for a large part of the big game animal population, for birds, for millions of small game animals and furbearers, and for fish. Hunting and fishing constitute an important supplementary source of income for numerous communities, many of which are economically depressed.
 - (g) They provide opportunities for healthful outdoor recreation, with a minimum of restrictions. Outdoor recreation is an important source of supplementary income in most areas as well as providing recreational opportunities for local residents. In some relatively depressed communities it becomes even more important.
2. Forestry research. The Forest Service conducts research in the entire field of forestry and the management of forest and related lands. This includes the growth and harvesting of timber, its protection from fire, insects, and diseases, the protection and management of watersheds, and improved methods for development and management of recreation resources. It conducts studies in forest economics, marketing of forest products, and a survey of the present extent and potential

growth and use of the Nation's forest resources. It also conducts research to develop new and improved products from wood, to increase efficiency of utilizing forest products, and to advance the efficiency and mechanization of forestry operations.

The research program has a two-fold objective:

- (a) To backstop the National Forest development program by devising more efficient practices for protecting, managing, and utilizing forest resources and that will not have undesirable consequences on environmental quality and productivity.
- (b) To develop new and improved practices that will lead to sounder uses of forests in other public and private ownerships, more efficient and profitable utilization and marketing of forest products, and improvement of the environment on these lands.

Results of research are made available to owners of private forest and range-lands, to public agencies which administer such lands, to forest product industries, and to consumers. Research in the growing, harvesting, processing, and marketing of forest products results in increased competitiveness for forest products. Contribution of the forest resource to the economic and social welfare is made more effective. Research in the management of resources for water, forage, wildlife, and recreation has similar effects as a basis for community development and satisfaction of national demands.

3. Cooperation with State and private forest landowners. The Forest Service cooperates with State agencies and private owners to improve multiple use management of non-Federal forest lands. Technical help is also provided by the Forest Service in cooperation with the State agencies to the processors of forest products. Opportunities exist for greatly increasing the contribution of these lands in enhancing the environment and to the social and economic welfare of the Nation as a whole and more particularly through rural development activities to improve the economic levels, employment opportunities, and general welfare of the people living in these areas. Specific programs are designed to:

- (a) Better protect the 574 million acres of State and privately owned forests and critical watersheds against fires, insects, and diseases.
- (b) Encourage better forest practices, for resource conservation, betterment, and profit, on the 393 million acres of non-Federal forest land.
- (c) Aid in the distribution of planting stock for forest and windbarrier plantings on non-Federal lands.
- (d) Assist the harvesters, processors, and marketers of forest products in doing a better job and thereby bring about greater use of forest products and increased income and employment for rural people.
- (e) The Forest Service also provides assistance to States for forestation and tree improvement under Section 401 of the Agricultural Act of 1956 (16 USC 568e-568g), through the State forester, including advice, technical assistance, and financial contributions.
- (f) Provide assistance to State and local communities in an intensified development planning effort to improve both the economic situation and environmental quality in rural America and to enhance environmental values associated with use of trees in urban and community areas.

Other work related to forestry includes:

4. Insect and disease control. Activities to suppress and control destructive forest insects and diseases to protect timber, recreation, scenic and other environmental values. Protection is provided to Federal lands and, in cooperation with the States, to non-Federal forest lands.

5. Flood prevention and watershed protection. The Forest Service cooperates with the Soil Conservation Service, appropriate State agencies and the local organizations sponsoring small watershed protection projects initiated under the Watershed Protection and Flood Prevention Act of 1954 (16 USC 1001-1007) in planning and installing forestry and related land resource measures on the watersheds. The Forest Service also collaborates with the Soil Conservation Service, other Federal and State agencies in the conduct of comprehensive river basin studies relating to the development of water and related land resources under authority of the Water Resources Planning Act (42 USC 1962) and 16 USC 1006 mentioned above. Such studies can form part of the basis of plans for regional and community economic development.

On National Forest lands and on non-Federal forest lands within the watersheds authorized for treatment by the Department of Agriculture under the Flood Control Act (33 USC 701), the Forest Service plans and installs watershed improvement measures, in the form of minor physical structures, cultural measures, and intensified fire control, to retard runoff and reduce flood water and sediment damage. Work on non-Federal land is carried on in cooperation with the Soil Conservation Service and the appropriate State and local agencies.

The Forest Service cooperates with the Soil Conservation Service and other Federal, State, and local agencies or groups in the emergency treatment of watersheds impaired by fire or other similar disasters to prevent the loss of life or serious flood and sediment damages. This work is performed under the authority of Section 216 of the Flood Control Act of 1950 (33 USC 701b-1) with funds allotted to the Forest Service by the Soil Conservation Service. This section of the Act provides that not more than \$300,000 of the regular appropriations for Flood Prevention may be expended during any one fiscal year for emergency measures.

Generally, this work is performed with funds allotted to the Forest Service by the Soil Conservation Service. Forest Service funds are used to finance land treatment and certain other measures on small watershed projects located on National Forest lands.

6. Job Corps Civilian Conservation Centers. The Forest Service operates 20 Job Corps Civilian Conservation Centers on National Forests throughout the United States under agreement with the Department of Labor. The Forest Service provides the staffing, administration and logistical support to physically operate and maintain the Centers and conduct the basic education, plan and supervise the recreation, and fully implement the vocational training of corpsmen. The funds for this program are transferred from Department of Labor. There are 41 to 60 permanent staff assigned to each Center based upon enrollee capacity of 112 to 224. Total capacity of all Centers is 3,848 corpsmen and Centers operate on a 24-hour, seven-day week basis. Both human and natural resources are being upgraded through these Civilian Conservation Centers, as young men improve their education and job skills in preparation for a more productive life.

7. Youth Conservation Corps. The Forest Service and the Department of the Interior share equally in a program authorized by the Act of August 13, 1970, as amended, (85 Stat. 1319). This work-education program provides: Gainful employment of America's youths from a variety of economic, racial and social backgrounds, ages 15 through 18, during the summer months in a healthful outdoor atmosphere; further development and maintenance of the natural resources of the United States; and an opportunity for understanding and appreciation of the Nation's natural environment and heritage. The work projects include recreation facilities maintenance and construction, wildlife habitat improvement, timber stand improvement, trail maintenance and construction, and visitor information services. The residential program includes both urban and rural youth who reside away from, as well as adjacent to, public lands. The non-residential program includes those youth who reside adjacent to public lands.

8. Timber stand improvement. Funds collected from timber purchasers in connection with timber sales, under authority of the Knutson-Vandenberg Act, make possible some timber stand improvement work on cut-over areas each year looking to the establishment of natural tree growth and protecting it through the critical period of early growth. This work also helps to obtain stocking of trees of desirable species, form and quality. Timber stand improvement in promising young growth not associated with timber sale cuttings is done with funds directly appropriated by Congress.
9. Brush disposal. National Forest timber sale contracts require treatment of debris from cutting operations or deposit of funds to pay for the work. If it is not feasible for the timber purchaser to dispose of the logging slash, which is the case in most sales, it is done by the Forest Service using deposits made by the purchaser. This work is essential because logging slash increases the fire hazard and may contribute to the buildup of insect populations, increase certain disease infestations, and cause damage to stream channels.
10. Land and Water Conservation Fund. This fund, transferred from the appropriation made to the Department of the Interior, finances the acquisition of lands, waters, or interests in lands or waters by the Forest Service as well as certain other Federal agencies. The Act requires that the lands and waters acquired be primarily of value for outdoor recreation. Means are provided for expanding outdoor recreation opportunities and protecting and improving environmental quality including natural beauty.
11. Rural fire defense. The Forest Service, as a part of its regular programs, also directs Federal activities and provides technical guidance and training to States concerned with the prevention and control of fires which might be caused by an enemy attack or a nuclear accident in rural areas of the United States.

IMPLEMENTATION OF NATIONAL ENVIRONMENTAL POLICY ACT

Federal agencies are authorized and directed by the National Environmental Policy Act of 1969 (PL 91-190) to use all practical means and measures, consistent with other essential considerations of national policy, to carry out the purposes of the Act to protect and enhance the quality of the environment. The Forest Service is an environmental agency and most activities, in the broadest sense, are directed towards the protection and enhancement of the environment. The Act supplements and reinforces previous authorities. Section 102(2)(C) of the Act requires environmental statements on proposed major Federal actions significantly affecting the environment. The objective of this section is to build into all decisionmaking processes an appropriate and careful consideration of the environmental aspects of the proposed action. It assists and encourages agencies to implement not only the letter, but the spirit of the Act.

In addition to consideration of environmental factors in the planning and decision-making process in a wide array of Forest Service activities NEPA also provides a formalized procedure for informing and taking account of comments from other agencies, individuals, and groups having expertise on the subject area under consideration.

The Forest Service has recently completed a study of the cost and manpower requirements of implementing the Act. The study shows that in fiscal year 1972, the Forest Service spent approximately \$13 million implementing NEPA. It is estimated that \$5 million would have been spent on impact surveys and related activities normally taken by the Forest Service that would have been done even without passage of NEPA. In fiscal year 1972, the costs for implementing NEPA were approximately 2 percent of the Forest Service budget. However, continued need for increased quality as well as quantity will cause the costs to at least double in fiscal year 1974, according to careful projections and estimates. Complexity is increasing, the

volume of cases is sharply upward, and the scope and quality of statements must be improved. The entire planning and decisionmaking process of the Forest Service is involved.

Cost Summary

Fiscal Year 1972:

	<u>Amount</u> (in millions)	<u>Man-Years</u>
Cost of implementing NEPA	\$13	712
Related costs and man-years incurred without NEPA ..	<u>5</u>	<u>273</u>
Increased cost to implement NEPA	<u>8</u>	<u>439</u>

Fiscal Year 1974:

Estimated cost to implement NEPA	\$28	1,533
Related costs and man-years incurred without NEPA ..	<u>6</u>	<u>273</u>
Increased cost to implement NEPA	<u>22</u>	<u>1,260</u>

The fiscal year 1974 estimated cost for various categories of work is as follows:

Environmental analysis and reports	\$16,240,000
Draft and final environmental statements	3,080,000
Input to other Federal agencies, review and comment on other agency statements, and assistance to State and local people ..	2,800,000
Training, monitoring, inspecting, reporting, and other related activities	<u>5,880,000</u>
Total	<u>28,000,000</u>

To accomplish the purposes of the Act and to meet Agency responsibilities and objectives, Forest Service policy is that the responsible official will not make a decision on a proposed action until the environmental impacts are assessed in detail. Alternative actions that will reduce adverse impacts or enhance environmental quality will be thoroughly explored. In the implementation of this policy, an environmental analysis will be made for proposed uses, activities, and plans concerning or involving National Forest System lands. The Forest Service is also following the same procedures for other activities where there are potentially major and significant environmental impacts or public controversy.

These analyses address the points required in NEPA. Along with established criteria, guidelines, and knowledge of potential or existing controversy, the analysis helps the responsible official determine if the proposal is a major Federal action affecting the environment significantly enough to require an environmental statement.

NEPA principles and requirements are being built into the land use planning and other planning processes. In addition, careful monitoring and evaluation is essential to fulfill the requirements of the task.

Prior to NEPA, the Forest Service prepared "impact" reports on proposed actions; these examined environmental impacts and mitigating measures of proposals. However, NEPA requires agencies to examine a wider range of alternatives, explores cumulative and secondary effects to a greater extent, and further formalize reviews with other agencies and the public.

ORGANIZATIONAL STRUCTURE

The Forest Service maintains its central office in Washington with program activities decentralized to 9 regional offices, 129 forest supervisors' offices, 726 district rangers' offices, 2 State and private forestry area offices, 8 forest and range experiment stations, the Institute of Tropical Forestry, and the Forest Products Laboratory. Location of headquarters offices:

Regional Offices:	Missoula, Montana	Portland, Oregon
	Denver, Colorado	Atlanta, Georgia
	Albuquerque, New Mexico	Milwaukee, Wisconsin
	Ogden, Utah	Juneau, Alaska
	San Francisco, California	
State and private forestry area offices:	Upper Darby, Pennsylvania	
	Atlanta, Georgia	
Experiment stations:	Ogden, Utah	Berkeley, California
	St. Paul, Minnesota	Fort Collins, Colorado
	Upper Darby, Pennsylvania	Asheville, North Carolina
	Portland, Oregon	New Orleans, Louisiana

Forest Products Laboratory: Madison, Wisconsin

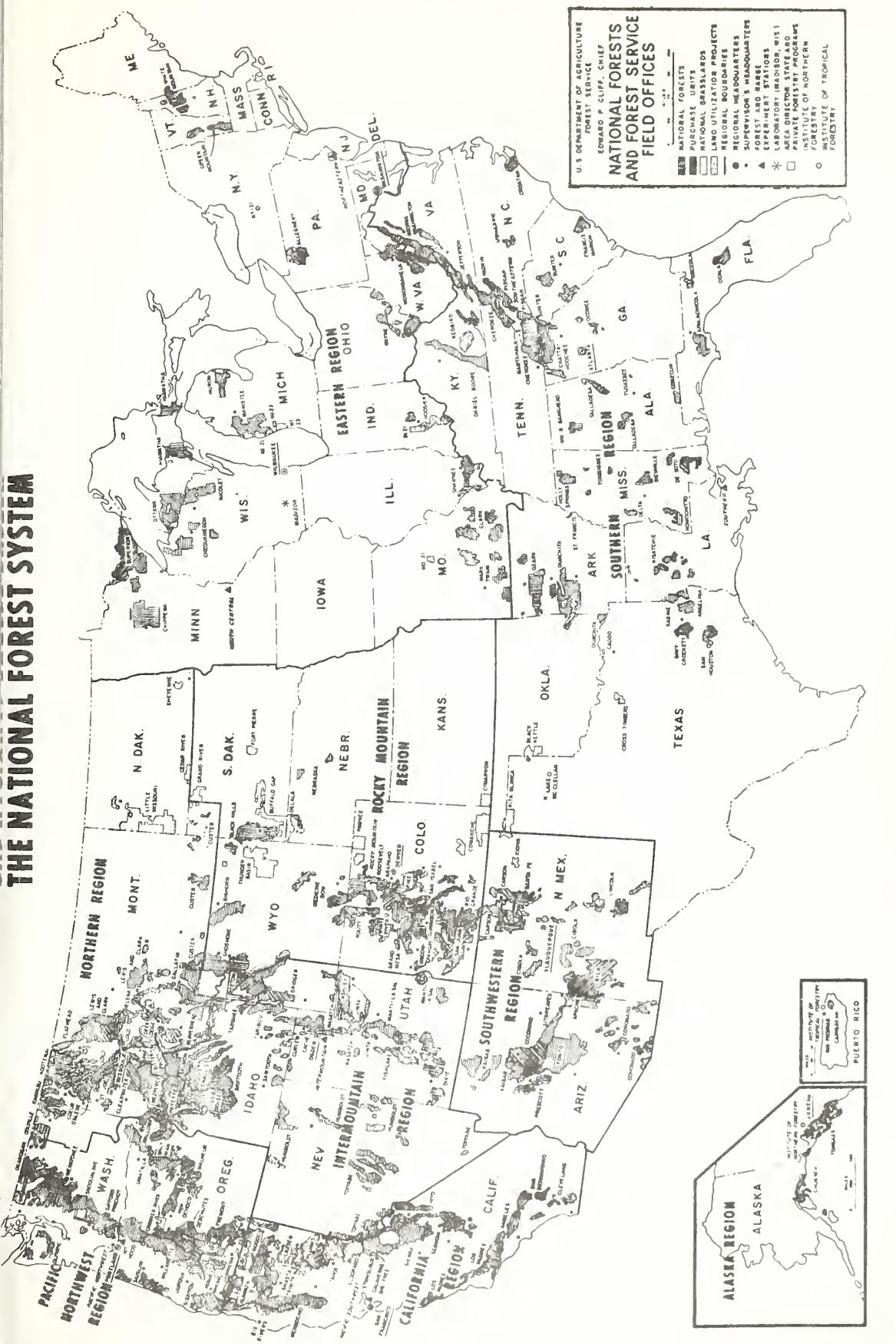
Institute of Tropical Forestry: Rio Piedras, Puerto Rico

National Forest, National Grasslands, and Utilization lands administered by the Forest Service are located in all States except the following six:

Delaware	Massachusetts
Hawaii	New Jersey
Maryland	Rhode Island



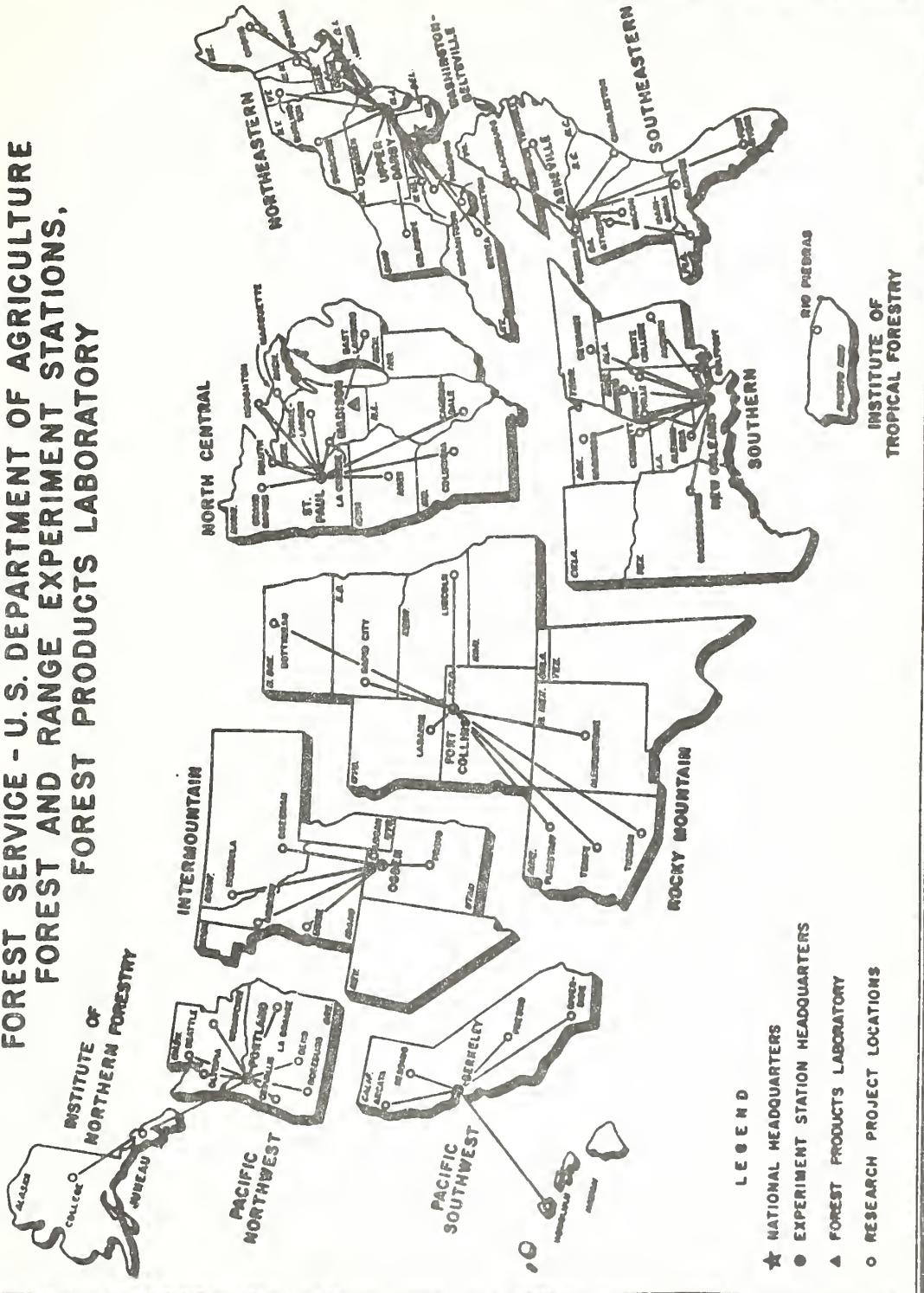
THE NATIONAL FOREST SYSTEM





FOREST SERVICE - U. S. DEPARTMENT OF AGRICULTURE
FOREST AND RANGE EXPERIMENT STATIONS,
FOREST PRODUCTS LABORATORY

INSTITUTE OF
NORTHERN FORESTRY



Summary of Estimated Appropriations and Receipts

Page No.	Item Appropriated Funds	Available 1972 1/	Estimated 1973 2/	available 1974	Budget estimates 1974	Increase or decrease 1974 over 1973
20	Forest protection and utilization:					
20	Forest land management	\$301,182,617	\$255,179,000	\$246,324,000	-\$8,855,000	
73	Forest research	54,581,422	61,140,000	57,275,000	-3,865,000	
102	State and private forestry cooperation	27,759,000	32,760,000	23,760,000	-9,000,000	
116	Total, Forest protection and utilization	383,523,039	349,079,000	327,359,000	-21,720,000	
132	Construction and land acquisition 3/	35,703,200	48,581,200	25,498,000	-23,083,900	
137	Forest roads and trails 1/	148,740,000	158,840,000	87,700,000	-71,140,000	
139	Acquisition of lands for National Forests, Special Acts	80,000	80,000	94,000	+14,000	
115	Acquisition of lands to complete land exchanges	26,035	-	55,300	+55,300	
140	Cooperative range improvements	700,000	700,000	700,000	-	
142	Assistance to States for tree planting 3/	1,028,000	1,020,000	1,020,000	-	
143	Construction and operation of recreation facilities	-	-	3,546,000	+3,546,000	
145	Scientific activities overseas (special foreign currency program)	3,500,000	-	1,000,000	+1,000,000	
	Youth conservation corps 3/	3,500,000	3,500,000	10,000,000	+6,500,000	
	<u>Permanent Appropriations</u>					
157	Expenses, brush disposal 3/	18,008,351	18,000,000	18,000,000	-	
156	Roads and trails for States, National Forests Fund	22,661,542	33,871,106	40,900,000	+7,028,894	
158	Forest fire prevention 3/	211,071	215,000	250,000	+35,000	
159	Restoration of forest lands and improvements 3/	12,220	50,000	50,000	-	
160	Payment to Minnesota (Cook, Lake, and St. Louis Counties) from:					
	the National Forests Fund	259,038	259,038	259,038	-	
161	Payments to counties, National Grasslands	529,502	523,750	548,750	+25,000	
162	Payments to school funds, Arizona and New Mexico	69,316	114,043	115,000	+957	
163	Payments to States, National Forests Fund	56,648,064	84,676,129	102,012,000	+17,335,871	
	Total	671,699,378	699,509,966	619,107,088	-80,402,878	
	Deduct permanent appropriations shown above	98,399,104	137,709,066	162,134,788	+24,425,722	
	<u>Total (excluding permanent appropriations)</u>	573,300,274	561,800,900	456,972,300	-104,828,600	
	<u>Receipts 4/</u>					
	Timber sales	\$330,026,026	\$398,000,000	\$355,000,000	-\$43,000,000	
	Grazing	4,858,709	5,960,000	6,240,000	+280,000	
	Power	205,473	210,000	210,000	-	
	Recreation	3,561,279	4,100,000	4,100,000	-	
	Land uses	1,093,083	1,200,000	1,200,000	-	
	Mineral leases and permits	4,984,141	5,700,000	5,700,000	-	
	Admission and user fees	3,198,184	4,500,000	4,900,000	+400,000	
	National Grasslands and land utilization	2,079,805	2,095,000	2,195,000	+100,000	
	Total receipts	350,006,700	421,765,000	379,545,000	-42,220,000	

(Footnotes on next page)



1/ Includes Second Supplemental Appropriation Act, 1972 (PL 92-306, 5/27/72) -increased pay costs, \$3,751,000; increased health benefits, \$1,166,000; fighting forest fires, \$46,280,000; forest fire protection, \$5,000,000; cooperative law enforcement, \$2,500,000; \$4.6 million of trust funds used for fighting forest fires repaid in fiscal year 1973.

Includes personnel savings in Forest land management of \$4,720,000 applied to fighting forest fires; \$88,000 in Forest research and \$31,000 in State and private forestry applied to emergency work associated with fire and flood damages.

Excludes GSA space transfers of \$518,261.

2/ Excludes following: GSA space transfers of \$428,000 (Forest land management, \$425,000 and Forest research, \$3,000) and proposed supplemental for fighting forest fires, \$34,895,000.

Includes \$22,105,000 in Forest protection and utilization proposed for transfer to fighting forest fires.

3/ In addition, prior year balances are available.

4/ Amounts include:

	<u>1972</u>	<u>1973</u>	<u>1974</u>
Suspense account, Alaska a/	\$768,654	---	---
Suspense account, O&C lands b/	9,039,558	\$11,000,000	\$10,000,000

a/ Account established pending settlement of Indian rights on Tongass National Forest, Alaska. Settlement made as of April 1, 1972.

b/ Account established for Oregon and California railroad grant lands, for which receipts are transferred to Department of the Interior for distribution under the Acts of August 28, 1937, June 24, 1954, and August 3, 1961 (43 USC 1181f-g).

JOB CORPS CIVILIAN CONSERVATION CENTERS

(Funds transferred to Forest Service by Department of Labor)

	Available 1972	Amount	No. of Permanent :Positions :Positions :Positions	Estimate 1973	Amount	No. of Permanent (in thousands):Positions thousands):Positions thousands)	Estimate 1974
	No. of Permanent :Positions :Positions	(in thousands)		No. of Permanent (in thousands)	(in thousands)		Amount (in thousands)
Center capital	4	\$2,035	4		\$1,400	4	\$1,400
Center operations	874	23,905	887		24,505	887	24,505
Program direction	99	2,430	99	1/ 1,936	99	99	1/ 1,936
Total	977	28,370	990	27,841	990	990	27,841

NOTE: Fiscal years 1973 and 1974 estimates are based on best information available to the Forest Service as of January 8, 1973.

1/ Includes administration of union contracts.





FOREST PROTECTION AND UTILIZATION

	<u>Forest Land Management</u>	<u>Forest Research</u>	<u>State and Private Forestry Cooperation</u>	<u>Total</u>
Appropriation Act, 1973	\$255,604,000 ^{a/} 246,324,000 -9,280,000	\$61,143,000 ^{b/} 57,275,000 -3,868,000	\$32,760,000 ^{b/} 23,760,000 -9,000,000	\$349,507,000 327,359,000 -22,148,000
Decrease in appropriation				

Adjustments in 1973:

	<u>Forest Land Management</u>	<u>Forest Research</u>	<u>State and Private Forestry Cooperation</u>	<u>Total</u>
Appropriation Act, 1973	\$255,604,000 ^{a/}	\$61,143,000 ^{b/}	\$32,760,000 ^{b/}	\$349,507,000
Transfer to General Services Administration for rental of space	-425,000	-3,000	-	-428,000
Adjusted base for 1974	255,179,000 246,324,000 ^{a/} -8,855,000	61,140,000 57,275,000 -3,865,000	32,760,000 23,760,000 -9,000,000	349,079,000 327,359,000 -21,720,000
Budget estimate, 1974				
Decrease in appropriation				

a/ In addition, \$700,000 is available by transfer from Cooperative Range Improvements.

b/ Includes \$22,105,000 proposed for transfer to fighting forest fires (Forest land management, \$8,855,000; Forest research, \$4,250,000; and State and private forestry cooperation, \$9,000,000).

SUMMARY OF INCREASES AND DECREASES
(On basis of adjusted appropriation)

	<u>1973 estimate</u>	<u>1974 estimate</u>	<u>Increase or decrease</u>
<u>Forest land management:</u>			
<u>Sales administration and management</u> --To continue normal ten-year timber inventory cycle and continue to implement shift toward updating annual Plans (\$882,000) to provide silvicultural examinations of an additional 396,000 acres (\$313,000); and to finance increased costs of timber sales administration (\$200,000)	\$68,074,000	\$69,469,000	+\$1,395,000
<u>Wildlife habitat management</u> --Increase is for the coordination of timber activities with the biological needs and requirements of fish and wildlife species inhabiting the areas of work activity	7,724,000	7,802,000	+78,000
<u>Soil and water management</u> --To provide scientific soils, geology, and hydrology services support for timber management, transportation, planning, recreation, fire rehabilitation, range management, and pollution abatement program	9,734,000	10,123,000	+389,000



SUMMARY OF INCREASES AND DECREASES--continued
 (On basis of adjusted appropriation)

	1973 estimate	1974 estimate	Increase or decrease
<u>Forest land management</u> --continued			
<u>Mineral claims, leases, and special uses</u> --Increase of \$414,000 for minerals management and \$596,000 for action on new applications, amendments, transfers, and inquiries from prospective or present special uses permittees	5,657,000	6,667,000	+1,010,000
<u>Land classification, adjustments, and surveys</u> --Increases as follows: <u>\$553,000 for landline location and status to provide for searching, remonumentation and establishing corners, marking and posting of property lines, and preparation and maintenance of status records; \$292,000 for land classification to permit study and adjustment of land use patterns; \$98,000 for land exchange; and \$104,000 for mapping needs on the Sawtooth National Recreation Area in Idaho and areas in Alaska pursuant to the Alaska Native Claims Settlement Act</u>	8,038,000	9,085,000	+1,047,000
<u>Forest fire protection</u> --To increase prevention and initial attack activities and for intensified protection of Sawtooth National Recreation Area in Idaho	32,001,000	32,127,000	+126,000
<u>Maintenance of improvements for fire and general purposes (including communications)</u> --For maintenance of water and sanitation systems constructed under the pollution abatement program, and other improvements which support all Forest Service activities	7,795,000	8,576,000	+781,000
<u>Payments to Employees' Compensation Fund</u> --To increase amount needed to reimburse Employees' Compensation Fund	2,131,000	2,300,000	+169,000
<u>Reforestation and stand improvement</u> --A decrease of \$8,566,000 in this appropriation item is proposed. There will be an increase for reforestation and stand improvement in the Cooperative Work, Forest Service trust fund of \$2,821,000	31,702,000	23,136,000	-8,566,000
<u>Recreation-public use</u> --Decrease of \$10,000 is proposed. This amount was appropriated in 1973 over the budget request, but will not be obligated. The 1974 program will be carried out at the same level planned for 1973. In addition, there is a request of \$3,546,000 for Construction and Operation of Recreation Facilities	41,353,000	41,343,000	-10,000

SUMMARY OF INCREASES AND DECREASES--continued
(On basis of adjusted appropriation)

	1973 estimate	1974 estimate	Increase or decrease
<u>Forest land management--continued</u>			
<u>Rangeland management--decrease of \$274,000 is proposed.</u>	14,561,000	14,287,000	-274,000
Forest advanced logging and conservation--This program is not proposed to be carried out in 1973 or in 1974.	5,000,000 4,022,000 4,275,000 10,585,000 2,527,000	- 4,022,000 4,275,000 10,585,000 2,527,000	-5,000,000 - - - -
<u>Water resource development related activities</u>			
<u>Fighting forest fires</u>			
<u>Insect and disease control</u>			
<u>Cooperative law enforcement program</u>			
<u>Subtotal, Forest land management</u>	255,179,000	246,324,000	-8,855,000
<u>Forest research:</u>			
Timber management research	12,606,000	11,746,000	-860,000
Watershed management research	6,616,000	6,266,000	-350,000
Wildlife habitat and range research	4,588,000	3,473,000	-1,115,000
Forest recreation research	1,353,000	1,103,000	-250,000
Fire and atmospheric sciences research	7,878,000	7,378,000	-500,000
Forest insect and disease research	10,520,000	9,830,000	-690,000
Forest products utilization research	9,231,000	9,131,000	-100,000
In fiscal year 1973 the above amounts shown as proposed decreases in fiscal year 1974 were appropriated over the budget request. These funds are proposed for transfer to Fighting forest fires in 1973 and are not being requested in fiscal year 1974.			
Forest engineering research	1,478,000	1,478,000	-
Forest survey	3,433,000	3,433,000	-
Forest products marketing research	2,030,000	2,030,000	-
Forest economics research	1,407,000	1,407,000	-
<u>Subtotal, Forest research</u>	61,140,000	57,275,000	-3,865,000

SUMMARY OF INCREASES AND DECREASES--continued
 (On basis of adjusted appropriation)

	<u>1973 estimate</u>	<u>1974 estimate</u>	<u>Increase or decrease</u>
<u>State and private forestry cooperation:</u>			
<u>Cooperation in forest fire control</u> --A decrease of \$9 million is proposed to bring the 1974 program to the same level as carried out in 1973.	25,000,000	16,000,000	-9,000,000
<u>Cooperation in forest tree planting</u>	325,000	325,000	-
<u>Cooperation in forest management and processing</u>	5,000,000	5,000,000	-
<u>General forestry assistance</u>	<u>2,435,000</u>	<u>2,435,000</u>	-
Subtotal, State and private forestry cooperation	<u>32,760,000</u>	<u>23,760,000</u>	<u>-9,000,000</u>
Total	<u>349,079,000</u>	<u>327,359,000</u>	<u>-21,720,000</u>

PROJECT STATEMENT
 (FY 1973-1974--on basis of adjusted appropriation)
 (FY 1972--on obligation basis)

Project	1972	1973 estimate	1974 estimate	Increase or decrease
FOREST LAND MANAGEMENT:				
National Forest protection and management:				
(1) Timber resource management:				
(a) Sales administration and management	\$62,241,230:	\$68,074,000:	\$69,469,000:	+\$1,395,000
(b) Reforestation and stand improvement	28,147,587:	31,702,000:	23,136,000:	-8,566,000
(2) Recreation-public use	41,788,387:	41,353,000:	41,343,000:	-10,000
(3) Wildlife habitat management	6,447,612:	7,724,000:	7,802,000:	+78,000
(4) Range land management	15,282,047:	15,261,000:	14,987,000:	-274,000
(5) Soil and water management	9,687,315:	9,734,000:	10,123,000:	+389,000
(6) Mineral claims, leases, and special uses	7,602,897:	5,657,000:	6,667,000:	+1,010,000
(7) Land classification, adjustments, and surveys	1/ 7,954,944:	8,038,000:	9,085,000:	+1,047,000
(8) Forest fire protection	30,378,530: 4/	32,001,000:	32,127,000:	+126,000
(9) Maintenance of improvements for fire and general purposes (including communications)	8,656,700:	7,795,000:	8,576,000:	+781,000
(10) Payments to Employees' Compensation Fund	1,622,187:	2,131,000:	2,300,000:	+169,000
(11) Forest advanced logging and conservation	5/	5,000,000:	5/	-5,000,000
Subtotal	219,809,436:	234,470,000:	225,615,000:	-8,855,000
Amount advanced from Cooperative Range Improvements	-700,000:	-700,000:	-700,000:	-
Subtotal, National Forest protection and management	219,109,436:	233,770,000:	224,915,000:	-8,855,000
(12) Water resource development related activities	3,806,094:	4,022,000:	4,022,000:	-
(13) Fighting Forest fires	60,508,114: 2/	4,275,000:	4,275,000:	-
(14) Insect and disease control	9,496,445:	10,585,000:	10,585,000:	-
(15) Cooperative law enforcement program	3/ 84,484: 4/	2,527,000:	2,527,000:	-
Total, Forest Land Management	293,004,573:	255,179,000:	246,324,000:	-8,855,000
FOREST RESEARCH:				
Forest and range management research:				
(16) Timber management research	12,078,443:	12,606,000:	11,746,000:	-860,000
(17) Watershed management research	6,321,657:	6,616,000:	6,266,000:	-350,000
(18) Wildlife habitat and range research	3,640,707:	4,588,000:	3,473,000:	-1,115,000
(19) Forest recreation research	1,127,625:	1,353,000:	1,103,000:	-250,000
Subtotal, Forest and range management research	23,168,432:	25,163,000:	22,588,000:	-2,575,000

Project	1972	1973 estimate	1974 estimate	Increase or decrease
<u>FOREST RESEARCH--continued</u>				
<u>Forest protection research:</u>				
(20) Fire and atmospheric sciences research	4,936,204:	7,878,000:	7,378,000:	-500,000
(21) Forest insect and disease research	9,231,773:	10,520,000:	9,830,000:	-690,000
<u>Subtotal, Forest protection research</u>	14,167,977:	18,398,000:	17,208,000:	-1,190,000
<u>Forest products and engineering research:</u>				
(22) Forest products utilization research	9,006,966:	9,231,000:	9,131,000:	-100,000
(23) Forest engineering research	1,442,270:	1,478,000:	1,478,000:	-
<u>Subtotal, Forest products and engineering research</u>	10,449,236:	10,709,000:	10,609,000:	-100,000
<u>Forest resource economics research:</u>				
(24) Forest survey	3,388,680:	3,433,000:	3,433,000:	-
(25) Forest products marketing research	2,013,315:	2,030,000:	2,030,000:	-
(26) Forest economics research	1,255,871:	1,407,000:	1,407,000:	-
<u>Subtotal, Forest resource economics research</u>	6,657,866:	6,870,000:	6,870,000:	-
<u>Total, Forest Research</u>	54,443,511:	61,140,000:	57,275,000:	-3,865,000
<u>STATE AND PRIVATE FORESTRY COOPERATION:</u>				
(27) Cooperation in forest fire control	19,941,818:	25,000,000:	16,000,000:	-9,000,000
(28) Cooperation in forest tree planting	311,927:	325,000:	325,000:	-
(29) Cooperation in forest management and processing	4,973,893:	5,000,000:	5,000,000:	-
(30) General forestry assistance	2,314,563:	2,435,000:	2,435,000:	-
<u>Total, State and Private Forestry Cooperation</u>	27,542,201	32,760,000:	23,760,000:	-9,000,000
Total obligations or estimate	374,990,285:	349,079,000:	327,359,000:	-21,720,000
Unobligated balance brought forward	-11,765 4/	-	-	
Unobligated balance carried forward	7,297,072:	-	-	
Unobligated balance lapsing	1,247,447:	-	-	
Total available or estimate	383,523,039:	349,079,000:		
Transfer to General Services Administration for space rental	518,261:	428,000:		
Transfer from other accounts	-4,600,000:	-		
Total, appropriation or estimate	379,441,300:	349,507,000:		



1/ Includes allocations to the Department of the Interior, Bureau of Land Management: 1972, \$270,000; 1973, \$270,000; 1974, \$270,000

2/ Excludes proposed supplemental for fighting forest fires.

3/ Includes allocation to the Department of the Interior, Bureau of Land Management: 1972, \$693,000; 1973, \$656,000; 1974, \$642,000

4/ Excludes 1972 unobligated balances carried forward--Forest fire protection

Cooperative law enforcement

5/
$$\begin{array}{r} \$4,881,556 \\ 2,415,516 \\ \hline 7,297,072 \end{array}$$





GEOGRAPHIC BREAKDOWN OF APPROPRIATIONNational Forest Protection and Management

<u>State</u>	<u>1973 estimate</u>	<u>1974 estimate</u>	<u>Change</u>
Alabama	\$1,854,800	\$1,866,000	+\$11,200
Alaska	5,177,200	5,209,000	+31,800
Arizona	9,707,700	9,768,000	+60,300
Arkansas	4,787,400	4,816,000	+28,600
California	39,226,000	39,463,400	+237,400
Colorado	10,237,500	10,300,000	+62,500
District of Columbia	10,255,400	10,319,000	+63,600
Florida	1,902,800	1,915,000	+12,200
Georgia	1,686,100	1,696,000	+9,900
Idaho	18,775,800	18,891,000	+115,200
Illinois	747,700	753,000	+5,300
Indiana	571,200	575,000	+3,800
Kansas	21,200	21,200	- -
Kentucky	1,509,300	1,518,000	+8,700
Louisiana	1,834,100	1,845,000	+10,900
Maine	73,300	73,300	- -
Maryland	125,200	126,000	+800
Michigan	4,120,500	4,146,000	+25,500
Minnesota	4,413,200	4,440,000	+26,800
Mississippi	2,596,000	2,612,000	+16,000
Missouri	3,104,000	3,123,000	+19,000
Montana	13,517,000	13,600,000	+83,000
Nebraska	281,100	283,000	+1,900
Nevada	1,834,800	1,846,000	+11,200
New Hampshire	1,146,900	1,154,000	+7,100
New Mexico	8,138,400	8,188,000	+49,600
New York	52,100	52,100	- -
North Carolina	2,980,300	2,998,000	+17,700
North Dakota	244,600	247,000	+2,400
Ohio	496,800	500,000	+3,200
Oklahoma	386,300	388,000	+1,700
Oregon	29,583,000	29,760,000	+177,000
Pennsylvania	1,335,500	1,343,000	+7,500
Puerto Rico	99,600	100,000	+400
South Carolina	1,510,500	1,520,000	+9,500
South Dakota	2,166,100	2,179,000	+12,900
Tennessee	1,745,900	1,757,000	+11,100
Texas	2,136,300	2,149,000	+12,700
Utah	7,166,500	7,211,000	+44,500
Vermont	561,500	565,000	+3,500
Virginia	2,698,600	2,716,000	+17,400
Washington	13,455,400	13,538,000	+82,600
West Virginia	1,923,100	1,935,000	+11,900
Wisconsin	2,567,300	2,583,000	+15,700
Wyoming	5,493,000	5,527,000	+34,000
Proposed for transfer 1/	10,223,000	- -	-10,223,000
Total	234,470,000	225,615,000	-8,855,000

1/ Proposed for transfer as follows:

Fighting forest fires	\$8,855,000
Insect and disease control	1,368,000

TIMBER RESOURCE MANAGEMENT - Sales administration and management

1972	\$65,312,000	1/ 3/
1973	68,074,000	2/ 3/
1974	69,469,000	
Increase	+1,395,000	

An increase of \$1,395,000 is proposed as follows:

- (1) \$200,000 for timber sales preparation and harvest administration due to increased costs.
- (2) \$882,000 for timber inventories to continue the normal 10-year inventory cycle and continue to implement the shift toward annual updating of timber management plans.
- (3) \$313,000 for silvicultural examinations of an additional 396,000 acres.

On the basis of planned program level for 1973 there will be an increase of \$2,289,000 in 1974 since \$894,000 of the 1973 appropriation is proposed for use for fighting forest fires and insect and disease control

The total program for fiscal year 1974, compared with 1972 and 1973, follows:

	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>Increase or decrease</u>
(in thousands)				
<u>Sale preparation</u>				
Standard and special components	\$28,566	\$28,184	\$28,686	+\$502
Marginal and unregulated components ...	2,591	4,273	3,616	-657
<u>Harvest administration</u>	<u>27,447</u>	<u>28,645</u>	<u>29,000</u>	<u>+355</u>
Subtotal, Preparation and harvest	58,604	61,102	61,302	+200
<u>Enforcement of Log Export Act</u>	550	560	560	- -
<u>Timber inventory and stand management control</u>	4,048	4,193	5,075	+882
<u>Silvicultural examination 3/</u>	430	2,219	2,532	+313
Savings applied to fighting forest fires	1,680	—	—	—
<u>Total</u>	<u>65,312</u>	<u>68,074</u>	<u>69,469</u>	<u>+1,395</u>

It is expected that the demand for National Forest timber will remain at a high level. The greatly increased cost and complexity of timber sale preparation has reduced the capacity of the Forest Service to prepare and sell timber.

The Forest Service and its local forest administrators are subject to ever-increasing scrutiny by an action-minded American public which is demanding environmentally-sound and quality management of its forest resources.

The principal increases in cost per thousand board feet in timber sale preparation are associated with the effort expended for coordinated resource inputs and detailed examination and inventory of the land and resources to assure full consideration and enhancement of the local environment. For example, on the Monongahela National Forest in West Virginia, the average number of man-hours used for preparing one thousand board feet of standing timber for sale has risen from 1.51 to 2.28, an increase of over 50 percent in the last three years. This increase is due to:

- (1) Comprehensive inventories to obtain detailed information on soil, water, wildlife, recreation, and timber.
- (2) Environmental analysis based on the above information and involving interdisciplinary review to provide coordination of timber harvest with other resource activities.
- (3) Public involvement through public hearings, field trips, and correspondence.

1/ Includes \$1,680,000 personnel savings applied to fighting forest fires.

2/ Includes \$479,000 proposed for transfer to fighting forest fires and \$415,000 travel reduction savings proposed for transfer to insect and disease control.

3/ For comparability, silvicultural examination is shown here, rather than as appropriated in 1972 and 1973 under Reforestation and stand improvement.

These actions often result in the need to revise road construction plans and timber sales programs.

Protection and enhancement of the environment and response to public concerns are evidenced in timber harvest through increased frequency of inspections and closer administration to achieve quality performance:

- (1) That minimizes or eliminates adverse impacts on the environment.
- (2) Protects the soil.
- (3) Insures more complete utilization and cleanup.
- (4) Promotes an improved, healthy forest cover.

To achieve a quality timber resource management program requires the assistance of specialists in soil analysis, landscape layout, and ecology as well as well-trained, competent silviculturists, sales layout foresters, logging systems engineers, and sales administrators. Workload and cost information, including the specialty mix, manpower and dollar resources, is shown in the following tabulation for fiscal years 1972, 1973, and 1974:

	<u>1972</u>	<u>1973</u>	<u>1974</u>
<u>Sale preparation</u>			
<u>Standard and special components</u>			
Million board feet (local scale)	9,825	10,000	10,000
Cost per thousand board feet	\$2.91	\$2.82	\$2.87
Total cost (in thousands)	\$28,566	\$28,184	\$28,686
<u>Marginal and unregulated components</u>			
Million board feet (local scale)	514	900	800
Cost per thousand board feet	\$5.04	\$4.75	\$4.52
Total cost (in thousands)	\$2,591	\$4,273	\$3,616
<u>Harvest administration</u>			
Expected harvest level in million board feet (local scale)	11,700	12,200	11,800
Total cost (in thousands)	\$27,447	\$28,645	\$29,000

Harvest of National Forest timber is dependent on:

- (1) The national demand for timber products (which may be represented by softwood lumber price indices and the expected level of housing starts).
- (2) The amount of National Forest timber sold in recent years.
- (3) Producers' expectations of future volumes available (represented by the portion of the programmed allowable harvest sold).

Based upon these factors, the Forest Service estimates that the timber harvest in fiscal year 1974 will be 11.8 billion board feet (local scale). The Forest Service plans to sell 10.8 billion board feet of timber (local scale).

The above represents the immediate measurable outputs of the timber resource program. The timber harvest program is administered through timber sale contracts to achieve:

- (1) Protection and enhancement of the environment.
- (2) Harmonization with indigenous ecosystems and other resource uses.
- (3) Utilization to the fullest extent possible of all timber harvested.
- (4) A healthy forest cover, improved and structured as specified in the timber management plan and individual stand prescriptions.

Log export controls were extended through calendar year 1973 by the Housing and Urban Development Act of 1970 (PL 91-609, December 31, 1970). Part IV of the Foreign Assistance Act of 1968 included a section specifying that not more than 350 million board feet of unprocessed timber may be sold for export from the United States from Federal lands located west of the 100th meridian. Program costs for the enforcement of the Act on National Forest lands will be maintained at the same level for fiscal year 1974 as for fiscal year 1973.

Adequate supplies of National Forest timber are important to continued strength in the Nation's housing program and to the Nation's economic program. The orderly progress of timber harvesting across a forest is determined from inventories conducted for timber management planning. Stand management control designed to organize and monitor efficient forest age-class distribution and to promote optimum timber growth also depends on adequate and timely inventory information.

The \$882,000 appropriation increase for timber inventories will enable the Forest Service to continue the normal 10-year inventory cycle. In addition, the Forest Service will continue to implement the shift towards annual updating of the programmed allowable harvest in all timber management plans to incorporate increases resulting from silvicultural activities and changes resulting from multiple use decisions.

The increasing demands for goods and services from the National Forests have changed the pattern of land management. No longer is it sufficient to prescribe management of each resource independently of the other resources nor is it sufficient to prescribe silvicultural measures over broad areas and forest types. It is now necessary to identify, map, measure, and prescribe treatment for each timber stand, in-place, to supplement the extensive, forest-wide statistical sample inventories and the management plans prepared therefrom. Before managers make decisions concerning the extent and pattern of timber harvest, reforestation, or timber stand improvement measures they must know:

- (1) Where potential harvest volumes are located.
- (2) The current growth and potential growth.
- (3) The relationship to other resources and the forest as a whole.
- (4) Potential or current problems such as fragile soils.
- (5) Public needs and desires.

The need for in-place information and individual stand silvicultural prescriptions in the young forests of the South and North has been met over the past decade through the silvicultural examination program. In addition, there has been a modest beginning of silvicultural examination in the western forest regions. The \$313,000 appropriation increase for silvicultural examination will permit an increase of 396,000 acres above the level funded in fiscal year 1973.

The above program permits managers to move ahead vigorously with the job of applying scientific forestry and multiple use planning to all commercial forest land including:

- (1) Inventory and in-place delineation of timber stands by age class.
- (2) Identification of problem areas and management opportunities.
- (3) Preparation of silvicultural prescriptions for each stand and action programs to remedy problem areas.
- (4) Selling of that timber volume prescribed for harvest.

Returns to the Treasury from the harvest of National Forest timber are summarized in the following tabulation:

<u>Fiscal Year</u>	<u>Receipts (in millions)</u>
1967	\$172.8
1968	205.6
1969	306.8
1970	283.9

<u>Fiscal Year</u>	<u>Receipts (in millions)</u>
1971	217.0
1972	330.0
1973	398.0 (estimated)
1974	355.0 (estimated)

Harvesting and processing of National Forest timber is not only important to the Nation's economy but is also vital to the economic health and stability of many local communities. For example, a 1972 economic study of the primary impact area for the Flathead National Forest in Montana, Flathead and Lake Counties, found that the timber industry provided 37.2 percent of the total basic employment and 51.3 percent of the total basic income for the impact area.

Examples of Recent Accomplishments

The record of timber harvested and sold during the past 5 years is compared with the programmed allowable harvest in the following table:

<u>Fiscal Year</u>	<u>Annual Allowable Harvest 1/</u>	<u>Actual Harvested</u>	<u>Percent of Allowable Actually Harvested</u>	<u>Actual Volume Sold</u>	<u>Percent of Allowable Actually Sold</u>
(Volumes in billion board feet, local scale)					
1968	12.7	12.1	95	11.6	91
1969	12.8	11.8	92	18.9 2/	148
1970	12.8	11.5	90	13.4	105
1971	12.9	10.3	80	10.6	82
1972	12.9	11.7	91	10.3	80

1/ As of the January 1 midpoint of the fiscal year. Programmed allowable harvest includes only sawtimber for National Forests West of the Great Plains and in Alaska, and sawtimber and convertible products for National Forests in the eastern half of the United States.

2/ Includes Juneau Unit Pulp Sale in Alaska of 8.75 billion board feet.

TIMBER RESOURCE MANAGEMENT-Reforestation and Stand Improvement

1972	\$32,205,000	1/ 3/
1973	31,702,000	2/ 3/
1974	23,136,000	

Decrease -8,566,000

A decrease of \$8,566,000 is proposed. This is a decrease of \$5,825,000 from the program level planned for 1973 since \$2,741,000 in the 1973 appropriation is proposed for use for fighting forest fires and insect and disease control work.

The program for fiscal year 1974, compared with 1972 and 1973, follows:

	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>Decrease</u>
	(in thousands)			
Reforestation	\$17,591	\$19,386	\$16,429	\$2,957
Timber stand improvement	11,212	10,206	4,732	5,474
Genetic tree improvement	1,396	1,718	1,622	96
Nursery operation and development	566	392	353	39
Savings applied to fighting forest fires	<u>1,440</u>	<u>—</u>	<u>—</u>	<u>—</u>
Total	32,205	31,702	23,136	8,566

The proposed reforestation and stand improvement program will contribute to the long-range goal of improving the total net growth and sustainable harvest volume on the National Forests. Growth resulting from this program will not only help to offset the decrease in available yield brought about by changes in land use but will also help to raise both the short-term and long-term sustainable harvests from National Forests. The reforestation program, utilizing funds authorized by the Knutson-Vandenberg Act, is being accelerated in the amount of \$2,821,000 to reforest cutover areas more promptly.

A decrease of \$2,957,000 is proposed in reforestation. The increase of 21,820 acres shown in tabulation below is the net result of including 26,200 acres of site preparation for natural reseeding, a type of reforestation not included in the acreage in previous years, and a decrease of 4,380 acres of planting and seeding. The inclusion of site preparation for natural reseeding more accurately indicates the planned accomplishments.

The decrease of \$5,474,000 in timber stand improvement will result in a program of 108,600 acres.

Genetic tree improvement is decreased \$96,000, the net result of decreases in the East where first generation conifer seed orchard establishment has been essentially completed and increases in the West where the program is being expanded.

Nursery operation and development, covering minor betterment projects at the 12 existing nurseries in seven regions and operation of a seed extractory at Santa Fe, New Mexico, is decreased \$39,000.

1/ Includes \$1,440,000 personnel savings applied to fighting forest fires.

2/ Includes \$2,566,000 proposed for transfer to fighting forest fires and \$175,000 travel reduction savings proposed for transfer to insect and disease control.

3/ For comparability, silvicultural examination is shown under Sales administration and management rather than as appropriated under Reforestation and stand improvement.

Project (1b)

A comparison of proposed fiscal year 1974 outputs with fiscal years 1973 and 1972 follows:

	<u>1972</u>	<u>1973</u> (estimate)	<u>1974</u> (estimate)
Reforestation (acres)	109,367	131,480	153,300
Timber stand improvement (acres)	191,041	227,870	108,600
Genetic tree improvement (acres of seed orchards)	1,406	1,430	1,450
Nursery operation and development (No. of nurseries)	12	12	12

The average annual growth increase from the total 153,300 acres to be reforested is estimated at 15.3 million cubic feet (approximately 77 million board feet).

The average annual growth increase from the total 108,600 acres to be treated by stand improvement measures is estimated at 5.4 million cubic feet (approximately 27.2 million board feet).

It is estimated that the total program will provide 314,000 man-days of employment to semi-skilled workers, generally in low-income rural areas.

An estimate of the acreage to be treated in each State is shown in Table 1 at the end of this section.

Examples of Recent Accomplishments

Reforestation. An area of 109,367 acres of National Forest land was reforested with appropriated funds in 1972--92,578 by planting and 16,789 by seeding. In addition, 15,881 acres of plantations were established by preparing the ground to promote regeneration from natural seed-fall. Other reforestation accomplishments in 1972 include:

- (1) Procurement of 88,578 pounds of clean tree seed. Forest Service seed extractories processed 72,592 pounds of seed and 15,986 pounds of seed were purchased from commercial seed companies or extracted by contracting.
- (2) Production of 102.3 million trees in 12 Forest Service nurseries.
- (3) Establishment of 235 acres of new seed production areas and 90 acres of new seed orchards. About 30 percent of the Southern pine seedlings outplanted were grown from the better quality seed produced in seed orchards or seed production areas.

In addition to reforestation done with appropriated funds, the following reforestation was accomplished with funds collected under the authority of the Knutson-Vandenberg Act:

	<u>Acres</u>
Tree planting	132,907
Seeding	23,086
Reforestation by natural seed-fall on prepared sites ...	<u>38,976</u>
	194,969

An additional 6,540 acres of National Forest land were reforested by other Federal and cooperative programs.

The total area reforested where some treatment such as planting, seeding, or site preparation was applied in 1972 was 326,757 acres.

Timber stand improvement. An area of 191,041 acres was treated by the following cultural measures with appropriated funds in 1972:

	<u>Acres</u>
Thinning	121,977
Release	58,490
Pruning	456
Fertilizing	<u>10,118</u>
	191,041

Timber stand improvement was also done for the same purpose with Knutson-Vandenberg funds on the following acreage in 1972:

	<u>Acres</u>
Thinning	116,460
Release	51,726
Pruning	1,075
Fertilizing	<u>559</u>
	169,820

TABLE 1 - Estimate of Reforestation - Timber Stand Improvement
to be Done Fiscal Year 1974 -- Appropriated Funds

<u>State</u>	<u>Reforestation</u> (Acres)	<u>Timber Stand</u> <u>Improvement</u> (Acres)
Alabama	8,000	1,700
Arizona	5,500	8,000
Arkansas	9,000	6,100
California	10,700	10,000
Colorado	4,200	600
Florida	8,500	4,200
Georgia	1,500	400
Idaho	11,200	2,200
Illinois	2,700	600
Indiana	800	500
Kentucky	1,900	2,500
Louisiana	2,600	200
Michigan	7,200	5,300
Minnesota	9,700	3,500
Mississippi	6,300	1,100
Missouri	5,600	3,500
Montana	8,700	6,400
New Hampshire	- -	800
New Mexico	2,500	2,000
North Carolina	3,200	3,000
Ohio	500	200
Oklahoma	1,600	200
Oregon	18,900	23,100
Pennsylvania	300	100
South Carolina	1,100	1,000
South Dakota	- -	700
Tennessee	1,100	1,100
Texas	3,800	800
Utah	1,000	- -
Vermont	- -	1,200
Virginia	1,400	2,500
Washington	7,200	9,500
West Virginia	200	1,300
Wisconsin	4,300	3,500
Wyoming	<u>2,100</u>	<u>800</u>
Total	153,300	108,600

RECREATION-PUBLIC USE

1972	\$41,008,300	1/
1973	41,353,000	2/
1974	41,343,000	
Decrease	-10,000	

A decrease of \$10,000 is proposed. The 1974 request for this item is the same as the total planned for 1973 since \$10,000 of the 1973 appropriation is proposed to be used for fighting forest fires. In addition, the budget proposes an appropriation of \$3,546,000 for Construction and operation of recreation facilities (p. 142).

The requested funding will provide for continued recreation use in the National Forests while allowing for the following:

- (1) Provide and maintain essential operation, including cleanup and sanitation services for an expected 4.2 percent increase in recreation use.
- (2) Meet additional refuse collection and disposal costs associated with operating and maintaining sanitary landfill dumps developed in 1973 and in accordance with E.O. 11507 and 11514.
- (3) Comply with E.O. 11593 to identify and initiate a program of management in connection with sites selected for the National Register of Historical Places.
- (4) Implement requirements of E.O. 11644 to regulate off-road vehicle use.
- (5) Initiate studies of areas identified as wilderness candidate areas.
- (6) Provide quality management and operation for two National Recreation Areas established by Congress in 1973--the Oregon Dunes NRA in Oregon and the Sawtooth NRA in Idaho.

The Forest Service manages recreation use through the National Forest System. The following tabulation shows the total planned financing for 1974 as compared with funds available in 1972 and 1973:

	<u>FY 1972</u>	<u>FY 1973</u>	<u>FY 1974</u>	<u>Change</u>
	(in thousands)			
Administration of concessions and recreation use permits	\$1,322	\$1,542	\$1,542	- -
Operation and maintenance	32,073	32,938	31,885	-\$1,053
Planning and inventories	1,249	1,269	1,249	-20
Wilderness administration	2,850	2,887	2,887	- -
Visitor Information Service	3,044	2,717	3,780	+1,063
Personnel savings applied to fighting forest fires	470	- -	- -	- -
Total	41,008	41,353	41,343	-10

A total of \$41,343,000 is needed to allow a coordinated and balanced program for managing recreation use in the National Forests as an integral part of the overall Forest Service program. The funding will allow for basic services for the increasing number of recreation visitors to the National Forests. Basic services will be provided to cope with an expected 198.2 million visitor-days of use to prevent adverse environmental effects and infringement on other resource use of the National

- - - - -
1/ Includes \$470,000 personnel savings applied to fighting forest fires.

2/ Includes \$10,000 proposed for transfer to fighting forest fires and \$253,000 travel reduction savings proposed for transfer to insect and disease control.



Forests. The use is a 4.2 percent increase over fiscal year 1973 and an increase of about 15 percent over use of 172.5 million visitor-days use in 1970.

The funding will provide visitor safety, enforcement of occupancy and use regulations, signing, and general services for operations, cleanup, sanitation, maintenance and management to protect the environment while offering recreation opportunities.

The National Forest recreation program includes many activities. These are classified into activities occurring in developed sites (such as campgrounds and ski sites) and dispersed areas (such as back country areas or wilderness). More than 60 percent of the use occurs in undeveloped areas. The following illustrates the variety of activities and the use occurring in 1971:

<u>Activity</u>	<u>Public Use</u>	
	<u>Visitor-Days</u>	<u>Percent</u>
Camping	48,254,300	27.1
Picnicking	7,360,600	4.1
Recreation travel (mechanized)	41,066,400	23.1
Automobile	(35,861,800)	(20.3)
Scooter and motorcycle	(2,571,400)	(1.4)
Ice and snowcraft	(2,400,900)	(1.3)
Other	(232,300)	(.1)
Boating	5,618,600	3.2
Power boats	(3,416,100)	(2.0)
Self-propelled boats	(2,202,500)	(1.2)
Games and team sports	709,200	.4
Waterskiing and other water sports	828,200	.5
Swimming and scuba diving	3,614,200	2.0
Winter sports	7,158,900	4.0
Skiing	(5,973,300)	(3.4)
Other	(1,185,600)	(.6)
Fishing	14,841,800	8.4
Hunting	13,129,500	7.4
Hiking and mountain climbing	5,999,500	3.4
Horseback riding	2,382,800	1.3
Resort use	3,630,800	2.0
Organizational camp use	4,415,800	2.4
Recreation residence use	7,636,500	4.3
Gathering forest products	1,239,800	.7
Nature study	797,800	.4
Viewing scenery, sports environment	7,084,200	3.9
Visitor information (exhibits, talks)	2,340,600	1.4
Total	178,109,500	100

A detailed explanation of financial needs follows:

- (1) Administration of concessions and recreation special use permits \$1,542,000

About 35 percent, or 29 million visitor-days use, will be accommodated by concessionaires (resorts, marinas, ski areas) and other recreation special-use permittees (organization camps, recreation residences). Private capital is used to develop facilities and to provide services while returning receipts to the Federal Treasury. In fiscal year 1972, receipts totaled almost \$3.6 million. It is estimated that receipts in fiscal year 1974 will be \$4.1 million.

Funding for this item will be used:

- (a) For plans, environmental reviews and statements, designs, prospectus preparation, and administration of new sites for concessionaire development and operation.

- (b) To administer and review proposed expansion or improvement of facilities under existing special-use permits.
- (c) To administer 1,780 concessions and over 20,000 recreation special-use permits.

Administration is necessary to assure compliance with permit stipulations which require environmental safeguards, satisfactory service, and that the sites continue to serve the purpose for which they were established. Requirements of the National Environmental Policy Act also make planning coordination and observance of construction activities essential.

(2) Operation and maintenance \$31,885,000

This item includes funding necessary to:

- (a) Operate the recreation program in developed sites and general forest areas, including special areas such as National Recreation Areas, Wilderness, archeological and other special areas, wild and scenic rivers, and the National System of Trails. Operation includes such items as regulation of use (including off-road vehicle use) where necessary, cleanup and disposal of refuse in sites and general forest areas, providing for reasonable safety of visitors, fee collection and enforcement, and law enforcement. It also includes operation of a landscape management program to enhance and protect the visual qualities of the National Forests.
- (b) Maintain facilities located in developed recreation sites and those in general forest areas.

The net decrease of \$1,053,000 will provide for recreation use while meeting requirements established in recent Executive Orders and new legislation.

The funding level will continue to provide for basic needs of cleanup and disposal of refuse, providing sanitation and sewage treatment facilities, visitor safety, law enforcement, and signing in general forest areas and developed sites.

Dispersed recreation use such as hiking, riding, fishing, hunting, sightseeing and snowplay take place on the 187 million acres of general forest areas. In 1974, this type use will amount to about 121 million visitor-days, or almost 60 percent of all recreation use occurring on National Forest lands. Providing for cleanup, reasonable safety of users, minimal sanitation facilities, and law and regulation enforcement is a major job that will be accomplished.

To protect environmental and resource values of general forest areas, the funds will also be used to implement requirements of E.O. 11644 regarding regulation of off-road vehicles. National Forest lands will be reviewed with public involvement to determine areas to be open or closed to such use. Intensive management to enforce the restrictions will also be necessary.

The funding will allow operation at current standards of more than 8,367 developed recreation sites. It will also provide for continued operation of 237 sites within six National Recreation Areas. The developed sites have a capacity of more than 720,000 persons-at-one-time. Visitor safety, law enforcement, and refuse cleanup and disposal will be provided.

The funding will allow for increased costs of refuse cleanup and disposal associated with sanitary landfill operations as required by E.O. 11507 (disposal of solid waste) and E.O. 11514 (Protection and Enhancement of Environmental Quality).

Essential recurring maintenance and correction of unsafe conditions for all Forest Service recreation facilities in general forest areas and at developed sites will also be accomplished.

Project (2)

The total funding will provide for the cleanup and administration necessary to accommodate 600,000 visitor-days of use expected on over 2,000 miles of the recently established Appalachian, Pacific Crest, and Gabrielino National Scenic Trails.

It will also provide for cleanup and sanitation within the 478 miles of Wild and Scenic Rivers System within the National Forests. It will provide for necessary operation to accommodate the 300,000 visitor-days of use these areas will receive. Cleanup costs are high due to difficult accessibility, and programs will be continued to encourage visitor self cleanup.

This funding will also allow a basic program to comply with E.O. 11593 in identifying and managing for public use key archeological and historical places, buildings, districts, and objects. The funding will allow initiating intensive management for public use and enjoyment of the sites while protecting them from vandals.

The funding requested will allow the development of procedural instructions and training programs for all National Forest land managers to insure that commodity uses, including timber harvest, which the National Forests must support are so planned and administered as to be compatible with the environmental and ecological integrity of all the landscapes involved. It will also allow a program for environmental protection and enhancement of National Forest lands. The availability of the scientific knowledge necessary to fully implement the intent of the National Environmental Policy Act of 1969 is dependent on a continuing cadre of specially trained landscape architects to participate in inter-disciplinary multiple use planning. The funding requested will allow for this continuing cadre of landscape architects for an intensified program in developing overall multiple use, environmental resource, and landscape plans assuring that timber harvest and other commodity uses are harmonious with the natural landscape.

(3) Planning and inventories \$1,249,000

The proposed decrease of \$20,000 will allow for maintaining the 1959 to 1961 National Forest Recreation Survey and unit management plans, and the preparation of plans for management of areas specially classified by Acts of Congress. Planning for off-road vehicular use will also be accomplished.

(4) Wilderness administration \$2,887,000

Maintaining the same level of funding will allow for a minimum acceptable program of cleanup and sanitation on the 14.2 million acres of National Forest Wilderness and Primitive Areas.

Studies leading towards reclassification of Primitive Areas as directed by the Wilderness Act of 1964 will also remain on schedule to assure completion within the allotted time directed by the Act.

It is planned to begin a program of studying roadless areas identified for possible future classification as wilderness.

(5) Visitor Information Service \$3,780,000

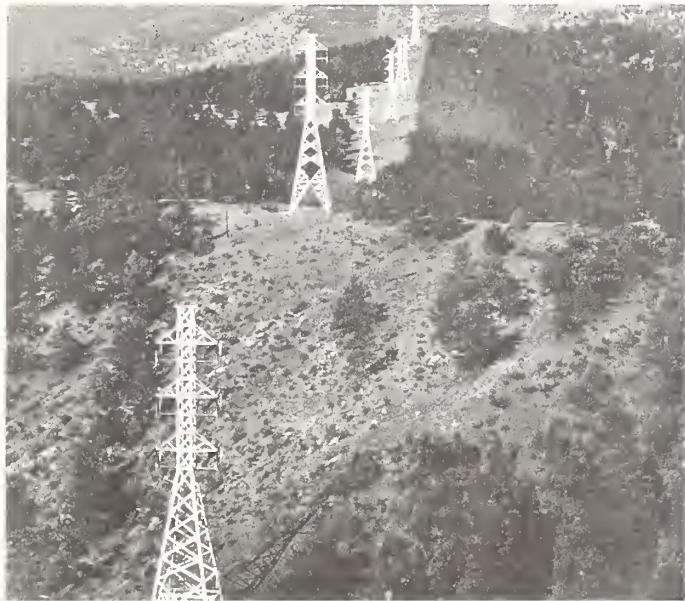
The \$1,063,000 increase will be used:

- (a) To prepare, open, and manage the first year of operation at Blanchard Springs Caverns on the Ozark National Forest in Arkansas, \$869,000.
- (b) To raise the operation and maintenance standards at various Visitor Information Service facilities throughout the National Forest System, \$194,000.

Project (2)

Naturalist programs at visitor centers, information stations, amphitheaters, campfire programs, along trails and with auto tours will be continued at existing levels. Such programs contribute significantly to public understanding and appreciation of natural resources and their role in providing a quality human environment. These programs are the foundation of on-the-ground, people-to-people environmental and ecological education activities of the Forest Service.

Landscape Management in Land Use



A well constructed, helicopter installed, but visually obtrusive power transmission line. Uniform right-of-way clearing, tower design and lack of color create a maximum visual impact.



One of two branch lines of the above powerline which has been well designed for minimum environmental impact upon the landscape.

Figure 2-1

Landscape Management in Recreation Development



A ski area not carefully designed and developed creates an undesirable esthetic impact upon the landscape.



A ski area carefully designed and developed considering all esthetic and environmental values creates a pleasing visual effect while providing needed recreation facilities for public use.

Figure 2-2

WILDLIFE HABITAT MANAGEMENT

1972	\$6,314,000	1/
1973	7,724,000	2/
1974	7,802,000	
Increase	+78,000	

A net increase of \$78,000 is proposed for the coordination of timber activities on National Forests with the biological needs and requirements of fish and wildlife species inhabiting the areas of work activity. On the basis of planned program level, there will be an increase of \$836,000 since \$758,000 of the 1973 appropriation is proposed to be used for fighting forest fires and insect and disease control. The planned level of financing for fiscal year 1974, as compared with 1972 and 1973, is as follows:

	<u>1972</u>	<u>1973</u>	<u>1974</u>
	(in thousands)		
Recurrent work	\$4,018	\$4,215	\$4,293
Habitat restoration and development	2,086	2,734	2,734
Rare and endangered species 1/	- -	775	775
Personnel savings applied to fighting forest fires	210	- -	- -
Total	6,314	7,724	7,802

1/ Estimated cost of rare and endangered species program in 1972 (\$556,000) was included in recurrent work, habitat restoration and development, and not categorized by items.

- (1) Recurrent work is the heart of the wildlife program which involves relatively fixed annual costs in relation to other resource uses and programs.

Coordination. Program activities such as timber harvesting, timber regeneration, timber stand improvement, recreation, road and trail construction, and reservoir construction can have adverse impacts upon wildlife and fish habitat unless development and land use activities are thoroughly coordinated with the environmental needs of the animal forms. To best accomplish this integration of resource use planning and provide adequate consideration for the fish and wildlife species, the expertise of trained biologists is required. Wildlife biologists are assigned to all regional offices and to a number of the National Forests to also work on multidiscipline planning teams and give technical guidance to this activity. The intensity of coordination determines the degree to which wildlife values are protected or enhanced. The control of animal damage to other resources also requires intensive coordination.

Cooperation. Cooperating with State conservation departments, the agencies responsible for protecting wildlife and regulating the harvest of game populations, is an important part of the Forest Service wildlife program. Habitat management on the National Forests is essential to the success of State fish and game programs because habitat and wildlife populations cannot be managed independently of each other. The States contribute a substantial share of the cost of habitat and fishing water improvements. In 1972, the States financed 45 percent of the habitat work on the National Forests. This amounts to an expenditure of about \$1.2 million.

Surveys and plans. Evaluating wildlife, fish, and rare or endangered species habitat, preparing or revising wildlife management plans, and assisting with multiple use planning, are continuing activities which are basic to an effective wildlife program.

1/ Includes \$210,000 personnel savings applied to fighting forest fires.

2/ Includes \$715,000 proposed for transfer to fighting forest fires and \$43,000 travel reduction savings proposed for transfer to insect and disease control.

Maintenance. Maintaining habitat improvements already in place is a recurring job that generally takes precedence over new development work. The States share in this work under terms of cooperative agreements.

- (2) Habitat restoration and development include a wide variety of activities designed to increase wildlife and fish production for the use and enjoyment of the public.

Food and cover--developing either food or protective cover to enhance the quality of the wildlife environment. This is a broadbased program applicable on all Forest Service administered lands.

Water developments--includes several types of projects aimed at providing drinking water for wildlife. This work is particularly important in the arid regions of the West.

Wetland developments. About 90 percent of this work consists of marshland improvement for waterfowl in the north central States and the development of greentree reservoirs along the Mississippi drainage. This work is extremely important in the total national effort to maintain waterfowl production.

Fish stream improvement--includes removal of migration barriers establishing in-stream improvement devices, mechanical gravel cleaning, streambank stabilization, streambank fencing, and construction of streamflow maintenance. Program emphasis will be directed toward the western forests and Alaska.

Fish lake improvement--includes development of new fishing lakes and the improvement of existing lakes. New lake development is a cooperative program with the State conservation departments.

- (3) Rare and endangered species include several activities directed toward improvement, protection and management of the habitat for 58 wildlife and fish species found on lands administered by the Forest Service.

Habitat maintained through coordination--coordination of other resource activities with programs for the protection and management of rare and endangered species. Surveys, studies, and plans form the basis for implementing the prescribed environmental needs and requirements. Activities are coordinated and integrated into the programs of other Federal and State agencies having direct responsibility for management of the populations.

Plans and surveys--evaluation of rare and endangered species habitat, preparing or revising wildlife management plans to best meet the multiple resource uses while continuing to provide maximum environmental benefits for these important species of wildlife.

Administrative studies--to effectively identify the critical limiting factors affecting the species through evaluative studies which will provide the guidelines necessary to future management of the habitat.

Direct habitat improvement--includes the development of food, protective cover, nesting areas, habitat enlargement and other enhancement measures to improve and maintain quality environment values.

Work accomplishments during 1972

A summary of direct habitat restoration and development accomplishments follows:

Food and cover development	233,505	acres
Water development	807	units
Wetland development	6,247	acres
Fish stream improvement:		
In-stream structures	1,013	units
Barrier removal	751	units
Spawnbed improvements	4,164	rods
Channel fencing	5,108	rods
Rough fish removal	106	miles
Fish lake development:		
Spawnbeds and shelters	20	units
Aquatic plant control	2,036	acres
Rough fish removal	40,085	acres
New fishing lakes	2,595	acres

Also, several thousand acres of wildlife habitat were improved through coordination efforts.

Examples of Recent Accomplishments

In 1972, a cooperative program with the Alaska Department of Fish and Game consisted of a team of biologists visiting ten logging camps to conduct training sessions. This training for loggers included the "how" of protecting fish rearing tributary streams. An outgrowth of this development is a brochure for sale administrators and loggers showing how to protect fish habitat during logging operations.

Through conversion of tall sagebrush and crested wheatgrass to small brush and forbs on the Curlew National Grassland in Idaho, 1,380 acres of bird habitat were improved. Twelve thousand tree and brush seedlings were planted into fence strips to provide cover.

A 60 percent decrease in the endangered Kirtland's warbler population has resulted in increased effort to save this species from extinction on the Huron-Manistee National Forests in Michigan. In cooperation with the Department of Natural Resources, Bureau of Sport Fisheries and Wildlife, and various Audubon groups, the forest has been working on an accelerated cowbird control project and plans to increase protection and management of nesting habitat.

Public use and enjoyment of the wildlife resources continue to grow. This use includes both hunting and fishing and appreciative uses. In calendar year 1972, the estimated public wildlife use of Forest Service administered lands amounted to:

Hunter visitor-days	13,129,000
Fisherman visitor-days	14,842,000

(The visitor-day is a unit of measure amounting to 12 hours)

In addition, there was an estimated 17.0 million days of appreciative use which includes bird and animal watching, wildlife photography, and forest visits to observe all forms of wildlife, including rare and endangered species. Wildlife activities not only provide for an outdoor recreation experience and the suitable environment for all wildlife species, but it is also important from an economic standpoint. This is especially true in rural areas and communities. Estimated user expenditures for wildlife-oriented activities on the National Forests for fiscal year 1972 are as follows:



<u>Activity</u>	<u>Days Use*</u>	User <u>Expenditures**</u> (in millions)
Appreciative (bird watching, photography) ...	17.0	\$85
Big-game hunting	24.0	347
Small-game hunting	9.0	68
Waterfowl hunting	1.7	17
Freshwater fishing	51.0	321
Saltwater fishing .....	.3	4
Commercial salmon fishing	- -	31

* Days use--calculated from visitor-days use reports, using the following conversions:

- (1) Each hunter averages 5 hours of hunting time per day.
- (2) Each freshwater fisherman averages 4 hours of fishing per day.
- (3) Each saltwater salmon fisherman averages 6 hours of fishing per day.
- (4) Each bird watcher/photographer is estimated to spend 4 hours per day.

** User expenditures--based on average expenditures for sport fishing and hunting as determined in the National Survey of Fishing and Hunting (1970). For commercial fishing, the output value is based on the value of the salmon catch of fish spawned in waters within National Forests but caught in off-shore saltwater.

RANGELAND MANAGEMENT

1972	\$15,643,000	1/
1973	15,261,000	2/
1974	14,987,000	
Decrease	-274,000	

A decrease of \$274,000 is proposed. This is a reduction of \$105,000 from the planned program level for 1973 since \$169,000 of the 1973 appropriation is proposed for use for fighting forest fires and insect and disease control.

This program is concerned with the management of the National Forest System range environment for livestock grazing under policies that will provide for maintenance of a quality environment and a viable rural economy.

National Forest System ranges are annually providing forage and habitat, during part of the year, for some 1.5 million cattle, 1.7 million sheep, and their offspring. The 17,000 ranch units which own these livestock are mostly family-type operations upon which many rural communities vitally depend for their economic life. Through allocation of the grazing resource, the Forest Service contributes to such socio-economic objectives of the Department of Agriculture as:

- (1) Development of rural communities.
- (2) Strengthening the family farm.
- (3) Achieving equal opportunity for disadvantaged minorities in rural areas.

The program is also committed to improvement and maintenance of a quality environment and to the multiple use principle of resource management (Figure 4-1).

The program's mission is accomplished through highly developed ecosystem management techniques used in various combinations. These include:

- (1) Grazing treatments specifically designed to act favorably on desirable species and communities of vegetation (Figure 4-2).
- (2) Vegetative cover manipulation by artificial means.
- (3) Various other cultural treatments of land to promote regeneration and growth of desirable plants.

Some specific examples of program activities are:

Collection and interpretation of resource data.
 Preparation and maintenance of management plans.
 Allocation of grazing use.
 Supervision of range use.
 Construction and maintenance of range facilities.
 Direct seeding of depleted ranges.
 Vegetative cover manipulation to improve range quality.
 Mechanical treatment of land to induce vegetative development.

- - - - -
 1/ Includes \$210,000 personnel savings applied to fighting forest fires.

2/ Includes \$75,000 proposed for transfer to fighting forest fires and \$94,000 travel reduction savings proposed for transfer to insect and disease control.

Following are some examples of recent and planned accomplishments:

<u>Activity</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>
Allotment plans maintained	5,650	5,850	6,050
Allotment plans installed	250	200	200
Allotment plans prepared	300	250	250
Permit administration			
Paid permits	17,872	17,100	17,000
Free permits	80,000	80,000	80,000
Livestock use supervision			
Cattle (including offspring)	2,691,540	2,691,000	2,682,000
Sheep (including offspring)	3,481,478	3,400,000	3,300,000
Revegetation (acres)			
Cover manipulation	91,458	91,000	80,000
Range seeding	29,819	30,000	20,000
Other cultural practices	30,723	29,000	28,700
Fence constructed (miles)	1,203	1,173	985
Water developments (no.)	1,440	1,300	1,200
Revenues (thousands)	\$5,512	\$6,620	\$6,900

New responsibilities have been added to the program as a result of Congressional recognition of wild free-roaming horses and burros as a public resource which must be managed and protected. The National Environmental Policy Act also has added new tasks to the range resource management program. Environmental effects of livestock grazing and range resource development projects must be evaluated. These assessments may require the preparation of environmental statements to comply with the provisions of the Act.

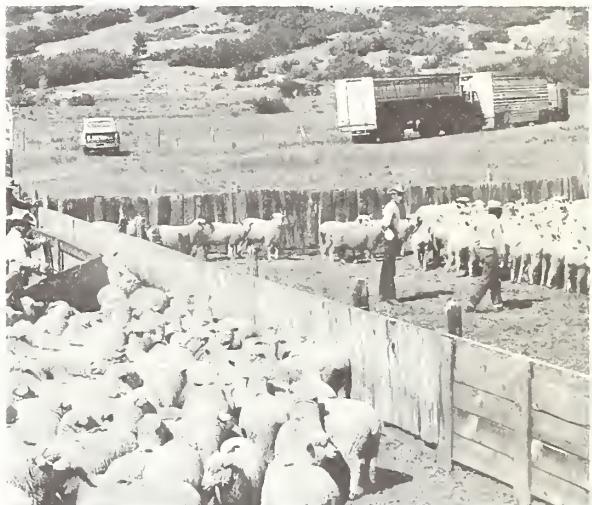
Rural area development



Spanish-American ranching community in northern New Mexico surrounded by National Forest land upon which its residents depend for a big part of their livestock forage needs.

Minority owned (Spanish-American) sheep operation shipping lambs to market-- from Carson National Forest in northern New Mexico.

Equal opportunity for minorities



Environmental quality



Range revegetation project leaves a natural appearing landscape, creates miles of "edge" for wildlife.

Figure 4-1



**Range area in Eastern Montana prior to
introduction of rest-rotation management.**



**Same area eight years after installation
of rest-rotation grazing treatment.**

Project (5)

SOIL AND WATER MANAGEMENT

1972	\$ 9,596,000	1/
1973	9,734,000	2/
1974	10,123,000	
Increase	+389,000	

An increase of \$389,000 is proposed to provide unmet needs for scientific soils, geology and hydrology services for support of timber management, transportation planning, recreation, fire rehabilitation, range management, and pollution abatement program on National Forest System lands. These scientific inputs and surveillance of the effects of management activities on the air, soil and water resources are essential to meaningful environmental input examinations, and statements made in response to the National Environmental Policy Act (PL 91-190) and requirements in the Federal Water Pollution Control Act Amendments of 1972 (PL 92-500). On the basis of planned program level for 1973, there will be an increase of \$449,000 since \$60,000 of the 1973 appropriation is proposed for use on insect and disease control.

Benefits to the Nation will accrue through:

- (1) Increased resource production supported by scientific soil, geology, and hydrology inputs.
- (2) Higher level of environmental quality through additional surveillance of management activities.

The total program for fiscal year 1974, compared with 1972 and 1973, follows:

	<u>1972</u>	<u>1973</u>	<u>1974</u>
	(in thousands)		
Soil, water, and air management support	\$ 6,567	\$ 7,112	\$ 7,501
Watershed restoration and improvement	2,232	1,922	1,922
Wild and scenic rivers studies	637	700	700
Savings applied to fighting forest fires	<u>160</u>	<u>—</u>	<u>—</u>
Total	9,596	9,734	10,123

(1) Soil, water and air management support (\$7,501,000, an increase of \$389,000)

The increase will be used for:

- (a) Essential management services, such as direct application of technical water, geologic, air or soils knowledge to specific on-the-ground resource and management situations; advice, counsel, and design of activities on programs in accord with specific air or water management objectives or on soil uses and problems.
- (b) Soil, water, geologic, air, and noise inventories, and investigations and the related interpretation analysis, maps and reports. Inventories conducted by scientists provide selected basic information interpreted for both short and long-term planning efforts in such areas as timber management, transportation systems, and the Wild and Scenic Rivers program. As management and development activities move increasingly into the remote, more difficult, and more fragile areas, the need for at least minimal levels of basic information about the watersheds becomes more critical.

— — — —
1/ Includes \$160,000 personnel savings applied to fighting forest fires.

2/ Includes \$60,000 travel reduction savings proposed for transfer to insect and disease control.

- (c) Surveillance that assures National Forest uses and programs are compatible with the protection of man's environment, identify areas with existing or emerging air, soil, and water quality problems so that corrective action can be formulated and implemented, and meet constantly increasing demands (PL 92-500) for documenting the effects of activities on the quality of air, soil and water, in relation to existing State and Federal standards.

The 390.4 million acre-feet of high quality water produced from National Forests is an example of the importance of water in the multiple use law. In 1970, the dependent gross product for all water uses from National Forests averaged \$992 per acre-foot of water produced, or a total of \$141 billion. The economic implications and intangible benefits for protecting the clean water resource will result in substantial and varied benefits to all our citizens.

In the West, particularly, more and more demands are being made upon available water supplies. The Congress and the Courts have determined that the United States has a right to reasonable use of water on National Forests reserved from the public domain except those waters appropriated before the National Forests were created. The objective is to obtain sufficient quantities of water in accordance with legal authority for the administration and development of the National Forest System. This project on a watershed basis includes:

- (a) An inventory of present and foreseeable needs.
- (b) A determination of water availability.
- (c) The potential for increasing yields in water-short areas.
- (d) Action to secure the water needed for National Forest purposes.

The western States have indicated their interest in having the Forest Service complete this program as rapidly as possible. During fiscal year 1972 the field inventory of Forest Service water uses was about 85 percent completed. A major part of this project is expected to be completed by 1975.

Additional work is developing because of concerted adjudication proceedings in some western States. Increasing judicial and administrative action is anticipated, both on lands reserved from the public domain and on acquired lands, over the next several years.

Examples of Recent Accomplishments

Land use planning--the process for making decisions about long-term allocations of natural resources and the land base from which they are obtained--has received greatly increased emphasis in 1972. The Tahoe Basin (California-Nevada), the Idaho Primitive area, and the White Clouds area of the Challis National Forest in Idaho, are some of the many areas that are or have been studied by interdisciplinary planning teams. Soil scientists, hydrologists, and geologists, among others, contribute vitally to these comprehensive planning efforts. Information essential for making knowledgeable land management decisions includes that concerning capabilities of the lands--their sensitivity to disturbance, their suitabilities for management choice, their hazards for use, their productivity potentials. The tempo of comprehensive management planning on National Forest System lands is expected to rapidly increase as the basic planning unit changes from selected areas to entire forests.

Soil resource inventories were conducted on 10.5 million acres; detailed soil surveys were conducted on about 0.5 million acres in cooperation with the Soil Conservation Service and the State Agricultural Experiment Stations.

Resource protection requirements and design services were provided by geology, hydrology and soil scientists on more than 1,800 projects.

On the Klamath National Forest in California, a geologic investigation identified an underground sanitation system as a contributory factor to a local landslide. A redesign of the system for disposal of liquid waste is underway.

Soil and water condition and trend observations along with monitoring effects of timber management, mineral developments, Boundary Waters Canoe Areas, and suspected pollution problem sites where people physically use the water resource are underway at 1,000 locations.

After the January 1972 massive landslide in the Bull Run Watershed--municipal supply watershed for Portland, Oregon--geology, hydrology and soils scientists and engineers provided management services to repair the slide area and safeguard water quality.

Field testing is being done of a remote control and recording nuclear snow gage capable of telemetering the water content and internal structural conditions of the snow pack. This instrument is needed to reduce the cost of snow course measurements, and advising forest users on snow pack, ripeness, water holding capacity and avalanche hazard buildup.

On the Monongahela National Forest in West Virginia, soil and water scientists examined more than 10,000 acres to identify potential erosion and sedimentation problem areas or situations in connection with the proposed harvest of timber on several prospective sale areas and their supporting planned road system routes. Prescriptions to minimize possible damages to the soil and water resources were developed.

(2) Watershed restoration and improvement (\$1,922,000)

This element is for the restoration and maintenance of surface disturbed areas to enhance the quality of the environment and restore productive capacity of renewable resources. High priority projects include:

- (a) The South Fork Salmon River Project (Idaho) where sedimentation has severely damaged anadromous and resident fisheries of regional and possibly national importance.
- (b) The Palzo tract project (Illinois) where chemicals and sediment from old surface coal mining operations have seriously degraded water quality and caused the United States to be cited in court by State water quality authorities.
- (c) South Fork Holston River and New River Watershed (Virginia) where sedimentation from old manganese mining operations affect stock water, wildlife and resident fisheries.

Restoring the hydrologic functioning of rural lands damaged beyond the point of natural recovery is essential to protecting the beauty and quality of the rural environment. This is a continuing program to:

- (a) Meet soil stability and water quality requirements.
- (b) Encourage the orderly development of watershed resources.
- (c) Repair degraded watersheds.
- (d) Provide continuing maintenance to projects completed to keep them effective.

The funds will be used to provide opportunities for utilizing the skills, and to furnish jobs and timely income for local people in rural areas of low income and critical underemployment. Illustrative of some of the specific activities are:

Project (5)

- (a) Emergency treatment and maintenance for the highest priority areas in the 184,000 acres of National Forest System lands burned annually by wildfires.
- (b) Being responsive to treatment and maintenance needs on thousands of miles of abandoned roads and trails that are the greatest contributors of sediment, uncontrolled runoff, and local problems of flooding and inability of the water supply to serve agriculture, domestic, or recreational needs.
- (c) Maintenance and reinforcement on the highest priority areas of eroding and gullied lands treated during the last 5 years.
- (d) Removal of debris in stream channels above reservoirs and in anadromous fish streams.

Improvement of the water resource by scientific management helps individuals and communities in rural areas improve their quality of life, and is an integral part of multiple use management.

In response to public demands, the water resource improvement activity for fiscal year 1974 will consist primarily of:

- (a) Application of special treatments to capitalize on opportunities to improve water yield through regular ongoing activities such as timber harvesting, range revegetation, timber stand improvement, and fire control in water-short areas.
- (b) Maintenance of existing water resource improvement projects to insure continuing effectiveness of work done to date.
- (c) Continuation of programs under cooperative agreement with Anaconda Company in Montana and with the Salt River Valley Users Association in Arizona.

Examples of Recent Accomplishments

Rehabilitation of damaged areas is progressing in all parts of the country, but much work still needs to be done.

Rehabilitation work is coordinated with other resource and service divisions to accomplish an integrated program of management under multiple use.

In fiscal year 1972, Forest Service crews treated and stabilized:

Acres of sheet eroded and deteriorated areas	38,000
Miles of gullies	60
Miles of streambanks	40
Miles of shorelines	5
Miles of roads and trails	1,400
Acres of lands disturbed by surface mining and prospecting	1,700

Treatments to aid in restoring favorable watershed conditions on lands damaged by wildfire continued. Emergency measures (initial treatment on new burns and maintenance on older burns) were applied to 20 fires on 71,000 acres that required onsite protection and posed threats to life, property, public health, and watershed functioning.

(3) Wild and scenic rivers studies (\$700,000)

These funds will be used to carry out continuing studies on seven of the nine study rivers for which the Secretary of Agriculture has responsibility under the Wild and Scenic Rivers Act (PL 90-542). This Act requires that studies be made and reports prepared by the Secretaries of the Interior and Agriculture for 27 rivers as potential additions to the National Wild and Scenic Rivers System. All studies are cooperative endeavors with States, Federal agencies, and other interested parties participating.

The Forest Service is the lead agency for Agriculture's river study work. The nine rivers for which Agriculture has study leadership responsibility are: Chattooga in North Carolina, South Carolina, and Georgia; Flathead in Montana; Illinois in Oregon; Moyie in Idaho; Pere Marquette in Michigan; Priest, St. Joe and Salmon (Main Stem) in Idaho; and the Skagit in Washington.

The funding for fiscal year 1974 will essentially complete study reports on the Skagit, St. Joe and Salmon Rivers and permit work to continue on the remaining Agriculture-led river studies. It also provides recognition for employment of local people in obtaining data on resource uses and in measuring and evaluating productive capability of soil and water resources.

Examples of Recent Accomplishments

In fiscal year 1972 the field work was essentially completed on the Pere Marquette, Flathead, and Skagit Rivers while substantial work was accomplished on the Illinois, Salmon, and St. Joe. Also, a National Forest contribution was made to the Interior-led Gasconade, Little Beaver, Little Miami, and Missouri Rivers studies.



Determine water availability and requirements for development use, and management



Develop prescriptions to protect the air resource and noise abatement in the total environment



Develop prescriptions to protect water quality under use and monitor to assure standards are being met



Furnish counsel on characteristics and use of free flowing streams

SCIENTIFIC GEOLOGY, HYDROLOGY, AIR, AND SOIL SERVICES PROVIDE A FOUNDATION FOR MULTIPLE-USE MANAGEMENT



Identify unstable land areas



Identify sensitive areas for potential use and development



Evaluate flood hazard



Prescribe restoration requirements after wild fire

Figure 5-1



This mountain meadow has been damaged by erosion. Gully checks are installed and the areas seeded to control soil erosion. Land use was modified to safeguard soil and water resources and restore the meadow's productivity.



Quality of the environment has been enhanced through control of soil erosion, reduced downstream sedimentation and a productive vegetative cover.

Figure 5-2

MINERAL CLAIMS, LEASES AND SPECIAL USES

1972	\$5,558,000	1/
1973	5,657,000	2/
1974	6,667,000	
Increase	+1,010,000	

An increase of \$1,010,000 is proposed as follows:

- (1) An increase of \$414,000 to provide early on-the-ground contacts and supervision of mining operations to prevent or reduce environmental damage.
- (2) An increase of \$596,000 for action on new applications, amendments, transfers, and inquiries from prospective or present special uses permittees.

On the basis of planned program level, there will be an increase of \$1,045,000 since \$35,000 of the 1973 appropriation is proposed to be used for insect and disease control.

Mineral claims, leases and permits (\$3,251,000, an increase of \$414,000)

Mineral operations conducted under the 1872 mining laws are generally subject to minimal State or Federal legislative restraints. Safeguarding other resource values from serious and lasting damage is therefore dependent upon timely--often daily--contact with miners. Particularly during prospecting, miners build poorly designed and improperly located access roads. Bulldozer trenches are excavated only to comply with annual assessment work requirements. Timely supervision can avoid much damage to other resources.

Heretofore, cooperation has been on a voluntary basis. Promulgation of regulations for the occupancy and use of National Forest lands in connection with mining claims will require the filing of operating plans for land use which will be approved contingent upon safeguarding other resources and restoring disturbed areas. While the number of claims managed is not expected to increase, the intensity of management will have to be increased. This will be accomplished by on-the-ground supervision on a continuing basis to insure compliance with the regulations and the intent of the National Environmental Policy Act of 1969.

At the same time mineral production is essential to the national economy and security. Mineral production generally contributes significantly to the rural economy by virtue of the locale of mineral-producing properties. In addition to the payrolls of operating mines, the performance of annual assessment work in the statutory minimum amount of \$100 per claim contributes several million dollars to rural area economy each year. Timely action on applications filed pursuant to the new regulations must be taken so as not to adversely affect the rural economy or unnecessarily delay the development of critical mineral needs.

Examination of mining claims is a time-consuming job for qualified mining engineers and geologists. To protect the public interest and encourage bona fide development, it is necessary to examine and report on claims:

- (1) For which patent applications have been filed.
- (2) Of doubtful validity that are being misused or that conflict with Forest Service programs.
- (3) Located in wilderness where applications for prospecting or mineral development permits have been filed.

The mineral leasing job requires:

- (1) Review of applications for prospecting permits and leases to determine if mineral activities are compatible with other uses.

1/ Includes \$140,000 personnel savings applied to fighting forest fires.

2/ Includes \$35,000 travel reduction savings proposed for transfer to insect and disease control.

Project (6)

- (2) The preparation of stipulations and operating plans to protect the environment.
- (3) The preparation of mineral title reports on all acquired lands.
- (4) On-the-ground administration to ascertain that terms of leases, permits, stipulations and operating plans are understood and followed.

Fiscal year 1974 anticipated workload as compared with fiscal years 1972 and 1973 follows:

	<u>1972</u>	<u>1973</u>	<u>1974</u>
	Estimated	Estimated	Estimated
Surface resource protection and management of mining claims (claims)	22,000	25,180	25,700
Mining law compliance and validity determination (claims)	4,000	4,500	3,300
Mineral leasing and surface resource protection (No. of leases requiring action)	9,632	11,240	10,250
Surface management of mineral reservations and rights outstanding (No. of cases requiring action)	890	928	900
Mineral material disposal (No. of permits or leases requiring action)	3,400	3,890	3,000
Mineral withdrawals and mineral character determinations (acres)	167,500	462,300	210,000

Examples of Recent Accomplishments

Mining claims. New reserves of uranium, copper, silver, gold, lead, zinc and molybdenum are in great demand by mining companies. Management of surface resources on mining claims was accomplished on 22,000 claims during fiscal year 1972. Approximately 4,000 mining claims were examined for compliance with the mining laws during the year. There were 78 mineral patent applications, involving 316 claims, pending at the close of calendar year 1971. Actions on 138 claims were completed during this period; 15 claims (7 applications) aggregating 221 acres were patented during the calendar year.

Under the Church-Johnson Mining Claims Occupancy Act action was completed on 24 cases.

A total of 449 Occupancy Act applications had been received as of June 30, 1971, the last date an application could be made under the law. As of that date, 370 cases had been completed with fee title offered in 68, a lease offered in 121, and a Forest Service special-use permit granted in 8. Because applicants were not qualified under the law, 140 cases have been rejected. Applications were withdrawn in 33 cases.

Mineral leases and permits. Demand for low-sulphur coal that will reduce air pollution in urban areas is very high. Exploration for oil and gas and phosphates continues at a high level. Some 15,700 leases and permits were active during fiscal year 1972, thus requiring Forest Service administration to protect the environment and coordinate uses. Nearly 3,400 sales and free use permits were granted involving disposal of common varieties of mineral materials. More than 900 mineral operations were active on acquired lands as a result of reserved or outstanding mineral rights. These require action to avoid or reduce environmental degradation.

Total revenue from leases and permits on acquired lands amounted to \$6,375,277 during fiscal year 1972. In addition, an estimated \$25 million was received from leases and permits on public domain lands. Mine or well-head value of minerals from National Forest System lands during fiscal year 1972 is estimated to exceed \$100 million.

Special uses - non-recreation (\$3,416,000, an increase of \$596,000)

Occupancy and use permits, easements and memoranda of understanding authorized 48,300 special land uses on 5.4 million acres of the National Forests in 1972. There is a constant turnover of these authorized uses of about 5 percent each year. The number of new permits issued has increased about 3 percent each year. It is estimated in fiscal year 1974 that the number will increase to around 51,500, covering a total of 5.8 million acres.

Users include public and private enterprise representing individuals, corporations and city, county, State and Federal government agencies. The special land uses are grouped in eight broad categories consisting of about 60 kinds of use excluding recreation. They are:

- (1) Agriculture.
- (2) Community improvement.
- (3) Industrial.
- (4) Public information.
- (5) Research, study, and training.
- (6) Transportation.
- (7) Utilities and communications.
- (8) Water.

Areas of particular interest are antiquities, electronic installations, fences, pastures, powerlines, reservoirs, roads, telephone lines, and water transmission facilities.

Special land uses assist economic development of rural areas by making suitable land available to farmers, ranchers, and local communities. The Federal Government is the major landowner in many localities. Denial of the use of National Forest System land would create hardships on the local communities, deter further business development, and materially affect on-going Federal programs in rural areas.

More than 25,000 new applications, applications for amendment, applications for transfer, and inquiries are received annually from individuals, companies, corporations, and city, county, and State governments, as well as Federal agencies, to fill their needs. Of this total number, approximately 6,500 are new applications.

Based on past experience, less than a third of the new applications can be approved as being compatible with resource and environmental factors and the needs of the general public. Each new application requires an impact survey, multiple use report or comparison with multiple use plan. New applications of major impact also require preparation of an environmental statement prior to approval. Investigations identify conflicts with management plans and existing uses. Recommendations attempt to assure conformance with multiple use and individual resource plans and programs and actions to protect the quality of the environment. A permitted use must be activated with improvements designed and installed or constructed in compliance with all existing laws, regulations, and local codes under a carefully drawn special-use document embodying all recommended protection measures. Of particular importance are the National Environmental Policy Act of 1969 (PL 91-190) and the Water Quality Improvement Act of 1970 (PL 91-224).

After permits are issued, periodic compliance inspections are made to determine whether the authorized conditions, responsibilities, and duties are met according to acceptable standards.

These standards are those which:

- (1) Maintain acceptable levels of water and air quality.
- (2) Protect the natural resources from excessive soil erosion.
- (3) Prevent unnecessary damage to natural beauty and esthetics of the environment.

- (4) Protect renewable resources such as timber, forage, and wildlife from careless or wanton damage.
- (5) Do not unnecessarily increase fire hazard.
- (6) Protect the public and other users from physical hazards.
- (7) Maintain fees or rentals equal to the value of the use authorized comparable with fair market value.

Of the total funds available, about \$75,000 would be used to develop and maintain information on National Forest archaeological sites and to protect such sites and artifacts from vandalism or other damage by unauthorized persons, including, if necessary, excavation of endangered sites on an emergency basis.

Under special authorities almost two-thirds of all permitted uses are allowed without charge. The remaining one-third pay fees for the privilege of occupying National Forest land. Fiscal year 1972 receipts from special land uses were \$1,088,941, an increase of \$121,018 over the previous year. In addition, to the actual receipts collected by the Forest Service, at least \$2 million of assistance, through free permits, should be recognized. The total direct monetary value of receipts and benefits is over \$3 million. However, many of these free permits no longer qualify, and they will be converted to charge permits. There will be a proportionate increase in receipts to the Treasury.



BEFORE



AFTER

Copper-nickel exploration in Stillwater Complex area, Custer National Forest, Montana.

Restoration accomplished through mining company-Forest Service cooperation.

Figure 6

LAND CLASSIFICATION, ADJUSTMENTS, AND SURVEYS

1972	\$7,554,000	<u>1/</u>
1973	8,038,000	<u>2/</u>
1974	9,085,000	
Increase	+1,047,000	

An increase of \$1,047,000 is proposed as follows:

- (1) \$292,000 for land classification to be used in land use planning with particular emphasis on determining optimum landownership patterns within and adjacent to National Forests.
- (2) \$98,000 to finance increased costs of examining and appraising an estimated program of 250 proposed land exchanges.
- (3) \$553,000 for land line location and land status records to be used for marking of landlines and monuments in support of timber management and other land and resource management activities and preparation and maintenance of status records.
- (4) \$104,000 for mapping needs on the Sawtooth National Recreation Area in Idaho and areas in Alaska pursuant to the Alaska Native Claims Settlement Act.

On the basis of planned program level, there will be an increase of \$1,097,000 since \$50,000 of the 1973 appropriation is proposed for use for insect and disease control. Subactivities of this program are identified below:

(1) Land classification (\$744,000, an increase of \$292,000)

The increase will allow participation in the increasing numbers of joint planning ventures with regional, State and local planning bodies assuring that favorable landownership patterns are recognized and pursued.

The function of land classification is to structure and recommend programs concerning the extent, location and composition of the National Forest System that will most effectively further national objectives. Purposes and activities are to:

- (a) Improve the land base to provide for current and prospective public needs for outdoor recreation space.
- (b) Improve the landownership pattern to facilitate development and use of recreation, timber, range forage, water, and wildlife resources which can contribute to growth of rural economies.
- (c) Encourage land adjustment for protection and improvement of watersheds.
- (d) Promote stability and encourage economic growth of communities in and near areas in the National Forest System.
- (e) Improve efficiency in the administration of natural resource programs.
- (f) Improve land use patterns to promote the preservation and enhancement of the environment.
- (g) Survey the degree of utilization of public lands pursuant to Executive Order 11508.

1/ Includes \$80,000 personnel savings applied to fighting forest fires.

2/ Includes \$50,000 travel reduction savings proposed for transfer to insect and disease control.

Financing at the level indicated will enable Forest Service to meet pressing needs for:

- (a) Identification and detailed analyses of areas within and adjacent to the National Forests and Grasslands to determine the land exchange and land consolidation which should be made to best accomplish national objectives, including the Sawtooth National Recreation Area. Of particular urgency are Forest Service intensive unit planning projects and joint agency planning efforts.
- (b) Determination of the merits of opportunities to transfer Federal lands to or from the National Forest System, including consideration of lands claimed by Indians, and jurisdictional transfers at numerous Federal water control projects important for outdoor recreation.
- (c) Analysis and classification of lands with potential for national recreation areas, monuments, wildlife preserves, or other special status.
- (d) Continuing action on Alaska native selections of land, the study of potential new National Forests, and other activities required as a result of the passage of the Alaska Native Claims Settlement Act.
- (e) Consideration of applications made by the State of Alaska for State land selections.
- (f) Continuing follow-up action on the disposition of public lands surveyed pursuant to Executive Order 11508.

Continual review of the location and extent of the National Forest System components is desirable to determine the direction land use and ownership patterns should take in relation to new developments and needs. The 154 National Forests and 19 National Grasslands located in 44 States and Puerto Rico include nearly 40 million acres of non-Federal land. Programs for consolidations of landownership within existing boundaries of these units need to be based upon sound consideration of their short- and long-range effects.

Examples of Recent Accomplishments

- (1) Preliminary study of possible new National Forests in Alaska which provided the Secretary of the Interior with necessary data for withdrawals under the Alaska Native Claims Settlement Act.
- (2) The addition of approximately 138,000 acres of Federally-owned land to the Santa Fe, Gila, Carson and Cibola National Forests in New Mexico.
- (3) The creation of the 90,000-acre Cedar Creek Purchase Unit in Missouri, including approximately 13,000 acres of former Title III Bankhead-Jones Farm Tenant Act lands.
- (4) After long and careful study, the return by the President, of 21,000 acres in Washington to the Yakima Indians and, by legislation, the return of 61,000 acres to the Warm Springs Indians in Oregon.
- (5) Agreement with the National Park Service to transfer 23,000 acres of National Forest land in the Yellowstone-Teton Corridor, Wyoming, to the National Park Service so as to coincide with the Centennial of the beginning of the National Park System.
- (6) Interchanges with the Corps of Engineers at Libby Dam, Montana; Cave Run, Kentucky; and Dworshak Reservoir, Idaho.
- (7) Preparation of an environmental statement on alternatives for future action on the Lake Ocklawaha - Rodman Reservoir Area (Cross Florida Barge Canal area, Florida).

(2) Land exchange (\$3,478,000, an increase of \$98,000)

Properly conceived land exchanges result in alleviating the need to construct certain road segments, the location and marking of property lines, the issuance of certain special-use permits, and other management costs. The consolidation of ownership through land exchanges results in a \$10 cost avoidance for every dollar spent in accomplishing the program. Selected examples of estimated cost avoidance which will result during the next 10 years, from the fiscal year 1974 exchange program, are:

<u>Reductions</u>	<u>Units</u>	<u>Amount</u> (in thousands)
(a) Property lines and corners	1,030 miles	\$1,236
(b) Road construction and maintenance	75 miles	3,750
(c) Use permits and occupancy trespass	300 cases	1,200
(d) Road right-of-way needs	190 cases	114
Total		6,300

Material revenue increases to the United States Treasury can also result through well planned exchanges. Access road problems can be eliminated and make heretofore inaccessible mature timber stands available for harvest to the mutual benefit of the United States and timber companies in need of timber supplies. The rural economy is also benefited. Significant benefits can be realized for both the United States and private owners engaged in livestock operations through the consolidation of ownerships, thus reducing costs and improving management of the ranges.

Carefully designed land exchanges can make material contributions in bettering rural America and the communities located within or near the boundaries of the National Forest System. Farmers and ranchers operating marginal operations can frequently acquire the adjoining National Forest System lands suitable for grazing, thus permitting development of an economic unit. Communities are frequently aided through exchanges that provide lands for expansion and development.

The fiscal year 1974 land exchange program will involve the examination and appraisal of 200,000 acres involving an estimated 250 proposed exchanges. The land the Government gives and receives in exchanges must be examined and appraised. Following examination and appraisal, negotiations are expected to be completed and 200 cases approved during the fiscal year involving a total of 180,000 acres.

Examples of Recent Accomplishments

In fiscal year 1972, 160 land exchanges were approved. In these exchanges, the United States will acquire 70,264 acres valued at \$24,800,508 and will grant 49,477 acres valued at \$22,479,830. A total of 145 land exchanges were fully completed with title to 99,814 acres passing to the United States and 66,225 acres passing to the other landowners. The net increase in National Forest acreage was 33,589 acres.

(3) Land status records and cadastral engineering (land line location) (\$3,637,000, an increase of \$553,000)

(a) Land status records. This is a systematic search of records and the presentation in plat, tabular record, and supplementary form of all ownership interests, and Congressional and administrative actions which limit or otherwise affect administration of the National Forest System or the use of adjoining lands by the owners thereof. It is the record of what land interests the Forest Service must administer. Significant progress is necessary to meet the expanding need for correct currently available records of Forest Service landownership, use, and encumbrances.

The National Forest System was created and altered to meet changing needs by many Acts of Congress and administrative actions in accordance therewith. Some 160 million acres were reserved from the public domain.

Over 27 million acres were acquired by several agencies of Government. Over the years many exchange, acquisition, and disposal actions have occurred. The great number of records of the status of such lands as to ownership, encumbrances, and restrictions on use were never satisfactorily assembled, checked, and placed in a system readily used and currently maintained as changes occurred. As a result, the Forest Service has been handicapped in meeting the impact of the vast increase in resource use in recent years.

A system has been developed to assure that accurate status information is assembled and records kept current at a central point and supplied to all field offices of the Forest Service. In converting to this system, all public records are reviewed and entered. Maintenance of records is done in the nine regional offices and supplied currently to some one thousand field offices. The project is about 85 percent completed. The conversion job is scheduled for completion by the end of 1976.

The systematic search and review of records in the conversion project continues to reveal, and identify more clearly, many parcels and general areas which have previously been misunderstood, identified inaccurately, or overlooked in administration due to inadequate records and poor identifying ties between records and ground location.

Users of these system records (Forest Service and other Government agencies, adjoiners, and other public users) are enthusiastic about these records. They give confidence in administration and reduce areas of potential ill-will with adjoiners and users of public and private resources.

	<u>Work Proposed for 1974</u>		<u>1973</u>	<u>1974</u>
	<u>1972</u>	<u>planned</u>		
Townships completed	1,200		1,000	1,000
(Total program: 15,561 mapping units--accomplished through 1971 - 11,994)				

- (b) Cadastral engineering (land line location). Accurate plainly marked property lines are essential to effective management of lands and land based resources. Significant progress in this activity must be made so that National Forest lands can be managed to meet Forest Service multiple use-sustained yield policy and contribute to the stability and growth of the rural economy.

There are about 272,500 miles of property lines between National Forest System lands and adjoining land owned by others. Presently, only about one-tenth of these property lines are adequately located and marked.

About 1,160,500 property corners are required to locate and perpetuate these property lines, with an additional 210,900 corners not on the property lines but needed to control the property corners. Many of these corners were established 50 to 200 years ago. A large share of them have disappeared because of neglect, carelessness, and destructiveness. Many have not yet been established.

Corner search under this program has revealed that about 30 percent of previously established corners are missing and must be restored through relatively expensive cadastral surveys. The search also reveals that many corners are in such poor condition that their loss is imminent unless quick action is taken.

The following has been accomplished since the program was initiated in 1958:

Fiscal Year 1958 - 1972

Corners:

1. Searched	278,858
2. Found acceptable evidence of corner	195,647
(a) Do not need remonumentation	49,253
(b) Need remonumentation	146,394
(1) Remonumented by Forest Service	82,355
(2) Remonumented by Bureau of Land Management/Forest Service cooperation	44,770
3. No acceptable evidence of corners found, cadastral surveys needed to establish corners	83,211
(a) Corners established by Forest Service cadastral surveys	33,349
(b) Corners established by Bureau of Land Management cadastral surveys	15,022
4. Miles of cadastral surveys run to reestablish missing corners and establish new corners required:	
(a) By Forest Service	12,620
(b) By Bureau of Land Management	7,642

Property Lines:

Miles marked to standard	16,886
Miles marked to interim standard	10,098
Miles inspected and maintained	3,759

The Forest Service has been fairly successful in obtaining help and support in this work from some of the adjoining landowners. Additional funding for this program would enable the Forest Service to take better advantage of such cooperation through timely attention to mutually bothersome property line problems.

Most of the activity to date has been to search out and preserve "thread hanging" corners to prevent their complete loss. For every such corner found in time and preserved, a future expenditure of about \$700 for a cadastral survey is saved. The average cost to search out and permanently preserve a corner by remonumentation is \$70.

Trespass that results in costly litigation and time-consuming "untangling" procedures can be mostly eliminated by timely and adequate marking of property lines.

Since 1966, an annual transfer of the appropriation for this program has been made to the Bureau of Land Management, Department of the Interior. The money was used for urgent cadastral surveys to reestablish property corners that were determined to be lost through the Forest Service corner search activity. In fiscal years 1973 and 1974 \$270,000 is planned for transfer each year to BLM.

The work to be done under the cadastral program is shown in the following table. This work is carried on in every State in which the Forest Service administers land.

Work Proposed for 1974 as Compared with 1972 and 1973

	FY 1972 <u>(Accomplished)</u>	FY 1973 <u>(Planned)</u>	FY 1974 <u>(Planned)</u>
<u>Corners (Nos.)</u>			
Search	24,436	29,500	29,500
Remonument	12,332	13,500	13,500
Establish	6,556	3,500	3,500
Maintenance	3,908	2,500	2,500
<u>Boundaries (miles)</u>			
Locate and mark:			
To full standard	2,003	1,500	1,500
To partial standard	657	1,000	1,000
Maintenance	321	1,000	1,000

Examples of Accomplishments

The accomplishment since 1958 in comparison to the total inventory of property corners and lines is as follows:

Corners searched 24 percent of total
 Property lines marked 8 percent of total

Work has been programed in areas of most urgent need, thus obtaining maximum immediate benefits.

One-third of the corners revealed as missing by the corner search phase to date has been reestablished by cadastral surveys. This work is also done where most urgently needed, thus obtaining maximum immediate benefits.

(4) Geometrics (\$1,226,000, an increase of \$104,000)

The increase will be used to help defray the costs of mapping requirements for the Sawtooth National Recreation Area in Idaho and areas involved pursuant to the Alaska Native Claims Settlement Act (PL 92-203).

Multiple use planning requires a particular knowledge of the terrain, the extent and location of the natural resources and how these resources are related and tied in with existing and planned transportation and recreational facilities. Elevational information is essential in the planning of transportation systems, timber sales, and recreational facilities.

Technological advancements have provided new means of improving and extending management of National Forest resources and related facilities. The adaptation and development of such techniques as the analytical approach to control extension for the essential control of remote sensing is being developed and implemented. This promises significant reductions in field-going operations.

Investigations are underway to provide more comprehensive and efficient methods for recording, interpreting, storing, retrieving and displaying interrelated terrain and resource data. Digitizing various forms of data for computer handling is an essential element in the process. Displays are in various forms--tabular data, Sean area plots, slope and aspect maps, orthophoto maps and engineering data.

These developmental operations are supplemental to and coexistent with the acquisition of conventional line mapping in the quadrangle format for the national mapping program. The data are needed on some 640,000 square miles of area within the National Forests for a wide range of engineering planning, timber, range, wildlife control, recreation facilities, and watershed management activities. Approximately 60 percent of this area is adequately covered in national accuracy line mapping. The scale, format, and accuracy of this material would be such that it can be released to the U. S. Geological Survey

and form an integral part of the standard topographic mapping program of the United States. Thus, duplication of effort is avoided, costs are reduced, and the availability of standard topographic maps is speeded up.

The quadrangle data are converted to various bases for the display of resource inventory data. Thus the interrelationship of all National Forest resources can be observed and analyzed in the process of multiple use planning. The resource inventory data are transferred to the bases by photogrammetric means.

Utilizing the terrain data and resource data procured through photogrammetric procedures, it is proposed to prepare several management bases on an adequate scale and format for approximately 10 National Forests.

		<u>1972</u>	<u>1973</u>	<u>1974</u>
Terrain Data (topographic)	thousands of acres ...	791	791	791
	square miles	1,080	1,080	1,080
Resource inventory data (planimetric)	thousands of acres ...	1,920	1,920	1,920
	square miles	3,000	3,000	3,000
General management	forests	8	12	10

The funds for fiscal year 1974 will be used to produce the above conventional line map information and develop new geometronic process and display techniques.

FOREST FIRE PROTECTION

1972	\$37,024,000	1/
1973	32,001,000	2/
1974	32,127,000	
Increase	+126,000	

An increase of \$126,000 is proposed as follows:

- (1) To provide necessary additional fire protection for the Sawtooth National Recreation Area (\$91,000).
- (2) To cover increased fixed equipment replacement costs (\$35,000).

On the basis of planned program level there will be an increase of \$331,000 since \$205,000 of the 1973 appropriation is proposed to be used for fighting forest fires and insect and disease control.

The Sawtooth NRA was established by PL 92-400, August 22, 1972. This special area requires more intensified protection due to increased public use and to maintain the special resource values.

The increase of \$35,000 will finance part of increased equipment replacement costs and release funds for essential fire prevention and initial attack requirements.

The objectives of the National Forest Fire Protection Program are to:

- (1) Hold fire losses to a level consistent with immediate long-range land management objectives.
- (2) Use fire to increase productivity of National Forest lands.
- (3) Reduce to tolerable limits the fire threat to life and resources in rural areas in case of enemy attack.
- (4) Accomplish the above objectives economically and with a high degree of personal safety.

This program is to lower the flammability of forest and rangelands resulting in greater protection of lives, property and resources. The quality of the environment is improved through scientific smoke management and application of sound fire management practices including the prescribed use of fire. Uncontrolled fires become less tolerable each year as the interface between rural and urban areas increases.

Land and resources protected by the Forest Service are subject to more use by recreationists, travelers and others for special purposes, collectively increasing the risk from man-caused fires. Paradoxically, response of the land to good management practice often creates combustible fuels where few existed before. The challenge is to meet the burgeoning problem of increased hazard and risk. Where possible, effort has been made to make improvements in fire prevention, preparedness, suppression, and modification of fuels to increase effectiveness and efficiencies.

1/ Includes \$50,000 personnel savings applied to fighting forest fires.

2/ Includes \$195,000 travel reduction savings proposed for transfer to insect and disease control and \$10,000 proposed for transfer to fighting forest fires. Does not include fiscal year 1972 unobligated balance of \$4,881,556 to be obligated in 1973 for fuels management.

The proposed budget will be used to finance protection measures approximately as follows:

<u>Protection Measure</u>	<u>FY 1972</u>	<u>FY 1973</u>	<u>FY 1974</u>
	(in thousands)		
Fire prevention	\$6,810	\$6,674	\$7,056
Fire detection	4,172	4,173	3,976
Fire attack forces	15,608	15,189	15,213
Air operations	3,949	4,317	4,257
Fuel modification	368	534	678
Equipment development and testing	489	526	424
Studies, surveys, plans and training	578	588	523
Transferred to fighting forest fires	50	—	—
Total	32,024	32,001	32,127

Note: Above figures do not include 1972 supplemental appropriation for fuels management in the amount of \$5 million.

Examples of Recent Accomplishments

Mobilization. During 1972 the mobilization effort was in initial attack forces. The success of the effort is borne out by the fire record. Although there was a 15 percent increase in fires over the previous year, only 4 out of 100 escaped initial attack as compared to nearly 7 out of 100 the previous year. For the first time ever, military aircraft airlifted fire trucks from California to Arizona to strengthen protection for 300 homes in the vicinity of the 28,000 acre, 5-day old Battle Fire.

Having adequate first attack forces available at sensitive locations during critical and hazardous burning conditions resulted in reduced acres burned during a near record year for number of fires. These first attack forces include ground tankers, air tankers, tractors, and experienced and trained firefighters. An example of the effectiveness of these fire attack forces comes from 10 sample fires in the Southwest. For these 10 potentially large fires it is estimated 30,500 acres were spared from burning resulting in an estimated saving of \$6.9 million in fire suppression costs.

Fire prevention and law enforcement. Man-caused fires were analyzed on the basis of occurrence, trends, and values lost by National Forests to select twelve forests with the comparatively worst man-caused fire problems. The analysis assists in achieving optimum cost/benefit relationships for available prevention funding. The National Forests in Mississippi and Shasta-Trinity NF, California, made such improvement that they are no longer in the twelve worst forests. Action on fire trespass cases during fiscal year 1972 resulted in collections of \$614,599.

Fire training and safety. As a part of a national fire management training program, 104 fire managers successfully completed training in advanced fire generalship designed for managers of large forest fire suppression operations. There were 60 managers trained in the use of aircraft in fire and resource management activities.

Firefighter protection from burns was improved with the introduction of a new fire retardant fabric that was tested by Forest Service testing facilities. During the Battle Fire on the Prescott National Forest, Arizona, which burned for seven days and destroyed 44.5 square miles of forest and range resource, there was one lost-time injury out of an estimated 14,100 man-days of hazardous work. During the Bear Fire, Los Padres NF, California, 6 men lost their lives in a helicopter accident. One other fatality in an air accident occurred in the Southwest Region.

Fuel treatment. Work in this program consists of constructing new fuel breaks, maintaining existing fuel breaks, making vegetative type conversions in highly hazardous fuel areas, cleanup of forest debris along roadsides, and treatment of undesirable forest fuels to maintain the environment and achieve ecological benefits.

Through mechanical treatment or prescribed burning, approximately 220,000 acres of excessive natural fuels were reduced in fiscal year 1972 to improve the forest environment and gain desirable ecological conditions.

Special fuel treatment is underway as a result of the fiscal year 1972 supplemental funding of \$5 million. Areas of work were selected that provided the best benefit/cost relationship and degree of protection consistent with previous work. Benefit/cost ratios of 5:1 are not unusual.

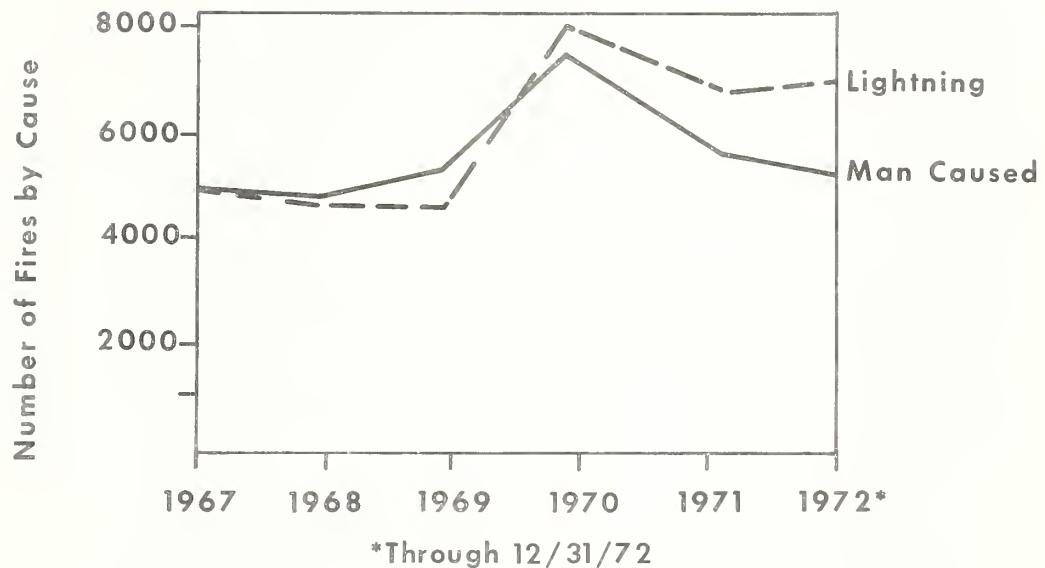
The Yerba Buena Ridge fuel break, Angeles National Forest, California, provided quick and safe access to the Aken fire front, making it possible to save 3,500 acres from burning. The estimated savings was \$1.9 million.

Air operations. Progress continues in selection of aircraft for use as air tankers. P2V Neptune patrol bombers are being released by the Department of Defense for purchase by private industry for use as air tankers. Coordination of efforts with Bureau of Land Management is resulting in standardization of items commonly used by the two agencies--such as smokejumper equipment, aircraft inspection and operating procedures.

Fifty pilots from private industry, State and Federal agencies completed training in the use of air tankers in fire suppression, the first such training of this scope and nature.

The first Modular Airborne Fire Fighting System, a detached fire retardant delivery system developed with the Air Force, is about complete and will be operational for the 1973 fire season.

NUMBER OF LIGHTNING AND MAN CAUSED FIRES BY YEARS



TOTAL NUMBER OF FIRES AND NATIONAL FOREST PROTECTED ACRES BURNED BY YEARS

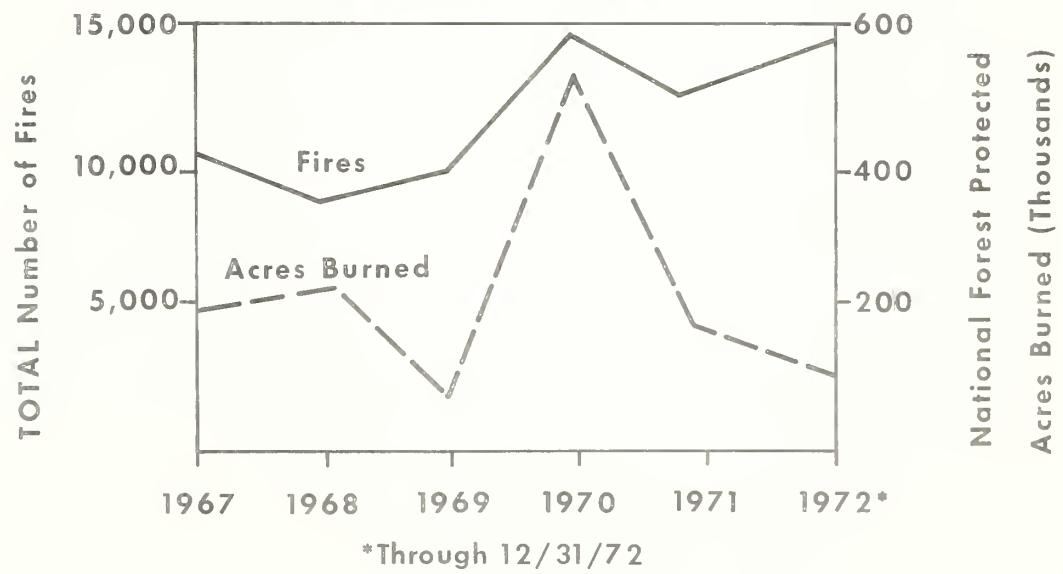


Figure 8

MAINTENANCE OF IMPROVEMENTS FOR FIRE AND GENERAL PURPOSES
(INCLUDING COMMUNICATIONS)

1972	\$ 7,684,000	1/
1973	7,795,000	2/
1974	8,576,000	
Increase	+781,000	

An increase of \$781,000 is proposed to be used for maintenance of water and sanitation systems constructed under the pollution abatement program, and other improvements which support all Forest Service activities.

The program provides for the maintenance to acceptable standards of buildings, utilities, pollution abatement facilities, airfields, communications systems, and related facilities throughout the National Forests and National Grasslands. The replacement value of these improvements exceeds \$300 million. It is essential that the physical plant upon which Forest Service land management activities depend, be adequately maintained. These funds will be used to maintain the following:

Type of facility

Fire lookouts, towers, and observatories	1,500
Dwellings, cabins, barracks, and trailers	5,400
Field offices	800
Storage and service buildings	7,000
Water and sewer systems	5,000
Radio units	22,100
Landing fields and heliports	500
Miles of telephone lines	7,500
Miles of administrative fences	1,200

Maintenance funds are distributed to field units based upon number of improvements by classes currently justified by program use and an analysis of unit maintenance cost.

- - - - -
 1/ Includes \$30,000 personnel savings applied to fighting forest fires.

2/ Includes \$48,000 travel reduction savings proposed for transfer to insect and disease control.

PAYMENTS TO EMPLOYEES' COMPENSATION FUND

1972	\$1,622,187
1973	2,131,000
1974	2,300,000
Increase	+169,000

An increase of \$169,000 is proposed to reimburse the Employees' Compensation Fund, Department of Labor, in accordance with PL 86-767 (5 USC 785), which was enacted September 13, 1960, for benefit payments made from that fund to employees of the Forest Service who are injured while in the performance of duty. The 1973 payment was \$2,131,010.

FOREST ADVANCED LOGGING AND CONSERVATION

1972 .....	..
1973	\$5,000,000
1974 .....	..
Decrease	<u>-5,000,000</u>

A decrease of \$5 million is proposed.

In fiscal year 1973 an amount of \$5 million was appropriated for a forest advanced logging and conservation program. However, these funds are not planned to be used in 1973 and funds are not being requested in fiscal year 1974.

It is proposed that the \$5 million appropriated in 1973 be transferred to Forest land management for fighting forest fires.

WATER RESOURCE DEVELOPMENT RELATED ACTIVITIES

1972	\$3,989,000	1/
1973	4,022,000	2/
1974	4,022,000	
No change is proposed. On the basis of planned program level, there will be an increase of \$26,000 since \$26,000 of the 1973 appropriation is proposed for use for insect and disease control.		

The funds available will help avoid misuse of resources in the most sensitive situations, in connection with water development projects of other agencies.

The construction agencies, frequently through separate Congressional authorization, initiate the projects and schedule the performance. The Forest Service cooperates in the planning, development, and management of the water and related resource development associated with National Forest System lands.

Each water development project poses resource problems and opportunities peculiar to the individual site under consideration, to adjacent and tributary lands, and to the associated rural area environment. This requires a comprehensive environmental impact survey by the Forest Service to determine the effect of each water resource development proposal on all the resources, facilities, and the rural areas affected by the project. These surveys determine the best pattern for multiple use management of project associated land, prescribe the resource management adjustments needed to assure a maximum National Forest contribution to the water project, and identify Department-wide opportunities for utilizing project potential for the enhancement of rural America.

In addition to impact surveys, the work performed under this program includes:

- (1) Liaison with the construction agency to assure the benefits of a combined and harmonious interagency effort.
- (2) Participation in wild and scenic river studies on State and private lands.
- (3) Treatment of lands, tributary to or within the project area to provide improved water yields and reduced sedimentation which will better serve operating requirements of reservoirs, maintain or increase the useful life of the project, and provide for public safety and enjoyment.

Work and financing planned for fiscal year 1974 is compared with fiscal year 1973:

	<u>Fiscal Year 1973</u>		<u>Fiscal Year 1974</u>	
	<u>No. of</u>	<u>Cost</u>	<u>No. of</u>	<u>Cost</u>
(1) Impact surveys and construction liaison	375	\$2,748,000	238	\$2,386,000
(2) Wild and scenic rivers studies	18	200,000	10	150,000
(3) Soil stabilization and cover improvement	65	1,074,000	77	1,486,000
Totals	458	4,022,000	325	4,022,000

(1) Impact surveys and construction liaison (\$2,386,000, a decrease of \$362,000)

Impact surveys delineate the effect, define necessary mitigating measures, and identify enhancement opportunities relative to proposed water resource developments associated with National Forests and National Grasslands. Reports resulting from such surveys document measures which are essential to the attainment of National Forest multiple use objectives and identify how National

1/ Includes \$100,000 personnel savings applied to fighting forest fires.

2/ Includes \$26,000 travel reduction savings proposed for transfer to insect and disease control.

Forest management can contribute to project purposes to optimize their economic and social contribution to rural America. To be effective, the surveys and reports must be concurrent with the construction agency's preliminary planning to permit their findings to be incorporated in the licensing or authorizing document.

Liaison with the construction agency during the construction period is necessary to facilitate coordination between the construction agency and the Forest Service. Protection of the land and resources, minimizing interference with regular protection and management activities, and facilitating construction agency operations are direct economic dividends derived from this program.

Experience has shown that without adequate analysis and liaison effort such as is provided by this activity, natural resources often suffer from enormous waste and misuse and the project works fail to make their maximum contribution. Natural beauty and high quality water are among those resources most susceptible to loss. The rising value of forest resources and constant increase in demands against the declining resource base requires increased perception, imagination, and thoroughness in the preparation of impact surveys. The impact survey effort and construction liaison work reflects an involvement at 238 projects.

Fiscal year 1972 accomplishments included preparation of environmental impact survey reports for: Upper Pena Blanca, Cochiti Reservoir, Kendall Dam, Alpine Narrows, Warm River, Hipes Reservoir, Bonneville Reservoir, Pike Creek, and Pinewoods Lake. In addition, construction liaison was carried out on such major projects as the California Water Plan and the Central Utah Project.

(2) Wild and scenic rivers studies (\$150,000, a decrease of \$50,000)

The proposed level of funding will cover Departmental responsibilities for Wild and Scenic Rivers Studies on State and private lands.

The Forest Service has lead responsibility for the Department of Agriculture relating to studies under the Wild and Scenic Rivers Act of 1968. In addition to rivers assigned to the Department, the Forest Service coordinates USDA input to the eighteen Interior-led studies. Work will proceed on the remaining ten of these in fiscal year 1974. Eight have already been completed. Funds will be used to carry out the Federal responsibility and to augment the State's efforts in their own studies under the Act. These activities are needed to fulfill the Nation's demand for a quality environment.

(3) Soil stabilization and cover improvement (\$1,486,000, an increase of \$412,000)

Treatment of lands tributary to water resource development projects to reduce sediment yield or to modify the pattern of runoff lengthens the life and increases the utility of the water control structures. This work is done on National Forest System lands tributary to the project, only where hydrologic analysis and other elements of the impact survey determine that such work is needed and that benefits to the project purpose are clearly established.

Treatment programs include the following:

- (a) Modifying the vegetation to decrease erosion, to reduce flood peaks, and to increase the annual quantity and improve the timing of water yielded from the tributary lands.
- (b) Clearing reservoir areas, where not done as part of construction, and keeping the reservoir free of debris to make the area safe for public use and to maintain scenic beauty.
- (c) Land treatment measures such as contour terracing, gully plugs, headwaters debris and flow retarding structures, and streambank and shoreline stabilization measures.

Essential land treatment and related measures are planned at 77 projects, including 14 PL-566 small watershed projects approved after March 21, 1966. Reservoir sweeping, debris and stump removal, and vector and aquatic weed control will be accomplished on about 30,000 acres at 32 projects in order to provide for public safety and user enjoyment of the reservoir area. At the remaining projects a combination of treatment measures, including some of the above, will be performed to improve water quality and quantity.

Fiscal year 1972 accomplishments included the application of land treatment measures at Trail Creek, Vernon, Georgetown, Carpinteria, and Cottonwood PL-566 projects. About 400 acres of stumps were removed at projects for protection of the reservoir users and for esthetic reasons. Reservoir sweeping was accomplished at over 15 projects and measures to control erosion and stabilize streambanks which improves water quality were applied at 25 projects.

GEOGRAPHIC BREAKDOWN OF APPROPRIATIONS

Water Resource Development Related Activities

	<u>1/ 1973 estimate</u>	<u>1974 estimate</u>
Alabama	\$29,900	\$29,900
Alaska	48,200	48,200
Arizona	138,800	138,800
Arkansas	30,200	30,200
California	649,000	649,000
Colorado	283,600	283,600
District of Columbia	212,000	212,000
Florida	4,700	4,700
Georgia	15,000	15,000
Idaho	322,500	322,500
Illinois	121,200	121,200
Indiana	59,000	59,000
Kentucky	62,200	62,200
Louisiana	1,600	1,600
Maine	7,300	7,300
Maryland	3,100	3,100
Michigan	24,000	24,000
Minnesota	17,300	17,300
Mississippi	37,500	37,500
Missouri	98,500	98,500
Montana	242,300	242,300
Nebraska	2,400	2,400
Nevada	21,500	21,500
New Hampshire	13,600	13,600
New Mexico	104,300	104,300
North Carolina	29,700	29,700
North Dakota	6,600	6,600
Ohio	52,800	52,800
Oklahoma	2,700	2,700
Oregon	385,900	385,900
Pennsylvania	8,600	8,600
South Carolina	18,200	18,200
South Dakota	17,700	17,700
Tennessee	36,700	36,700
Texas	45,500	45,500
Utah	356,000	356,000
Vermont	8,600	8,600
Virginia	48,500	48,500
Washington	271,600	271,600
West Virginia	47,300	47,300
Wisconsin	28,300	28,300
Wyoming	107,600	107,600
Total	<u>4,022,000</u>	<u>4,022,000</u>

1/ Includes \$26,000 travel reduction savings proposed for transfer to insect and disease control.

FIGHTING FOREST FIRES

1972 .....	.....	\$50,555,000	1/
1973 .....	.....	4,275,000	
1974 .....	.....	4,275,000	

No increase is proposed.

This program provides an initial amount for suppressing forest fires on or threatening National Forests and Grasslands which cannot be handled by the regular forest fire protection program. This initial appropriation is supplemented each year to the extent necessary to cover all emergency forest firefighting costs.

Included are expenditures for men and equipment to control large fires. In addition, when critical conditions present an unusual threat, men are engaged in special efforts to prevent fires and temporary forces are used at strategic locations to be available to attack fast-spreading fires.

The volume and scope of emergency forest firefighting varies annually according to severity of burning conditions and the extent of the forest fire protection program. This program and the forest fire protection program are directly related. The cost of fire protection on the National Forests and Grasslands is the sum of the two programs.

Calendar Year 1972 Fire Season

Extreme burning conditions continued in the Southwestern States during the spring and summer. Some areas show as little as one-fourth of the normal precipitation for the seven-month period, March through September. The Northwestern States generally experienced moderate burning conditions.

A 30 percent increase in the number of fires in the Western States, accompanied by a 17 percent decrease in the number of acres burned, as compared to 1971, attests to the effectiveness of first attack actions during the year.

Through December 31, 1972, 14,140 fires burned 116,526 acres of National Forest protected area. Of these fires, 5,733 were man-caused. The number of fires is the highest in 11 years, excluding 1970. Three major fires in Arizona and California burned 49,800 acres, or 42 percent of the acres burned. During one five-day period in August, 250 fires occurred in Southwest Idaho, taxing fire suppression capabilities. Only one of these fires became a large fire.

Geographic Breakdown of Obligations--Fiscal Year 1972

Alabama	\$30,712	Maine	279	Oregon	8,067,791
Alaska	28,192	Michigan	124,801	Pennsylvania .	4,666
Arizona	9,855,622	Minnesota	203,504	South Carolina	42,113
Arkansas	415,436	Mississippi	125,034	South Dakota .	196,794
California	15,277,485	Missouri	266,971	Tennessee	96,727
Colorado	1,003,464	Montana	2,378,317	Texas	33,491
District of Columbia	4,687	Nebraska	33,129	Utah	694,236
Florida	176,739	Nevada	584,635	Vermont	742
Georgia	30,662	New Hampshire ...	2,804	Virginia	185,145
Idaho	4,338,952	New Mexico	3,815,049	Washington ...	3,209,744
Illinois	29,097	North Carolina ..	190,559	West Virginia	14,770
Indiana	7,836	Ohio	13,644	Wisconsin	17,200
Kentucky	75,006	Oklahoma	29,725	Wyoming	710,833
Louisiana	91,521			Total	52,408,114

The amounts for 1973 and 1974 have not been distributed by States. Locations of emergency firefighting funds cannot be forecast with any degree of accuracy.

1/ Excludes \$4,720,000 personnel savings in other Forest land management accounts which were applied to fighting forest fires.

INSECT AND DISEASE CONTROL

1972	\$10,718,000	<u>1/</u>
1973	10,585,000	<u>2/</u>
1974	10,585,000	

No increase is proposed. In 1973, \$1.4 million in funds provided for other items is proposed for use in insect and disease control to meet unusual outbreaks which occurred in 1973.

The Forest Pest Control program involves protection of the forest from depredation by insects and diseases on lands of all ownerships. Activities include:

- (1) The prevention, detection, evaluation, and suppression of pests on all Federal lands.
- (2) Coordination of the program on lands of all ownerships.
- (3) Federal financial assistance to States for a similar program on State and private lands.

The program for fiscal year 1974 will include a strong effort to hold losses caused by bark beetles to tolerable levels. It is not possible to predict this far in advance the exact locale or scope of control operations, but present beetle activity indicates a need for:

- (1) Mountain pine beetle control projects in Montana, South Dakota, Wyoming, and Washington.
- (2) Douglas-fir beetle, fir engravers, and western pine beetle control projects in California, Oregon, and Washington.
- (3) Spruce beetle control projects in Alaska, Arizona, Colorado, New Mexico, Oregon, and Washington.
- (4) Southern pine beetle control projects in Alabama, Arkansas, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Texas, and Virginia.

Defoliating insects--such as the gypsy moth, spruce budworm, Jack pine budworm, tussock moths, and sawflies--will be controlled where resource values are seriously threatened by them and cost-benefit ratios are favorable. Current reports indicate that suppression projects may be required to control:

- (1) Gypsy moth in Massachusetts, New Jersey, New York, Pennsylvania, and Rhode Island.
- (2) Spruce budworm in Maine, Minnesota, and Montana.
- (3) Jack pine budworm in Michigan and Wisconsin.
- (4) Tussock moth in Oregon and Washington.
- (5) Sawflies in Michigan, Minnesota, and Wisconsin.
- (6) Cankerworms and leaf tiers in New Jersey, New York, and Pennsylvania.
- (7) Pine butterfly in Montana.

The National Environmental Policy Act, particularly the requirement for preparation and review of environmental statements, has increased the cost of doing business. This, coupled with cancellation of the registration of pesticides normally used to control the most troublesome forest defoliators has seriously reduced current capabilities to cope with major outbreaks and prevent devastating losses on a broad front. Public concern about the aerial application of any pesticide, however innocuous, has compounded the protection job.

1/ Includes \$150,000 personnel savings applied to fighting forest fires.

2/ Does not include \$1.4 million travel reduction savings in other Forest land management funds to be used for insect and disease control work.

Efforts must be diverted to screening and testing alternate chemicals and other means of managing pest populations. All these requirements, limitations, and diversions are resulting in current protection much below that which is necessary to maintain healthy forests and a desirable environment.

Current efforts will be continued on control of the dwarf mistletoes in the Western regions in 1974. These parasitic plants are responsible for reductions of tree growth amounting to estimated losses of \$40 million annually in lumber production from western conifers. Integrating control into planned silvicultural work provides a high rate of return (10-15 percent) by eliminating losses caused by dwarf mistletoe.

White pine blister rust control will be continued in the East, the Lake States, and in selected stands in California. The program in the East is primarily a cooperative one, financed by the States with Federal financial assistance. Careful evaluation of rust conditions and hazard has reduced the area requiring control materially in recent years.

Pest outbreaks fluctuate greatly. The cost to check and contain outbreaks cannot be accurately predicted. Using past experience as a guide, along with the knowledge of developing situations, Federal fund needs for fiscal year 1974, as compared with 1972 and 1973, are as follows:

<u>Item</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>
	(in thousands)		
Administration, detection, and evaluation	\$5,298	\$5,516	\$5,810
Methods improvement	731	720	720
Bark beetle control	1,566	1,563	1,389
Defoliator control	1,219	1,678	1,319
Other insect control	130	129	129
Blister rust control	819	644	615
Oak wilt control	71	59	57
Dwarf mistletoe control	707	250	520
Other disease control	27	26	26
Savings applied to fighting forest fires	150	—	—
Total	<u>10,718</u>	<u>10,585</u>	<u>1/ 10,585</u>

Impact data for most forest insects and diseases are sketchy or lacking. Good data are essential to properly analyze and evaluate outbreaks and make suppression recommendations. Studies to develop standards and implement collection of impact data for forest pests of high economic importance continue high on the priority job list for 1974.

Pest control scientists help to protect the environment by carefully weighing and determining the adverse effects of unchecked pest outbreaks and those which might result from prescribed control treatments with the benefits to be derived. As part of their overall responsibilities, pest control scientists will keep all environmental impacts, both beneficial and adverse, in proper perspective and recommend those courses of action that will provide the greatest benefits.

1/ In 1973 an additional \$1.4 million in funds provided for other items is proposed to be used for insect and disease control as follows: Southern pine beetle, \$700 thousand; gypsy moth, \$600 thousand; and spruce budworm, \$100 thousand.

Examples of Recent Accomplishments

Cooperative gypsy moth suppression. The insecticide carbaryl (Sevin) was used for suppression of gypsy moth populations on carefully selected areas by States of Pennsylvania (20,406 acres), New Jersey (49,962 acres), and New York (41,279 acres) in cooperation with the Forest Service. Treatments were successful in protection of current year's tree foliage. Significance of any long-term benefits must await further evaluation.

Gypsy moth research and development. The insect and disease program was involved as a full partner in the Department's research and development effort to develop an effective and environmentally acceptable integrated pest management program for the gypsy moth--in cooperation with Northeastern States, universities, citizens and other groups.

Change in cost-sharing with States. A broad program change, based on a study of workload, resulted in an increase of about twofold in cost-sharing with States for the cooperative pest action program on non-Federal lands. Also, a policy change was made to allow up to 50 percent (formerly one-third) cost-sharing for actual suppression work undertaken. These changes will provide States with an increased opportunity to carry out the total job on State and private lands in an effective manner.

Evaluation of seedling for disease resistance. Research findings for determination of resistance of selected loblolly and slash pine seedlings to fusiform rust disease were evaluated for use on a mass production scale. At the present time it appears that standardized screening of seed lots on a large scale and with a high degree of confidence can be done successfully. This will provide a rapid means of getting genetic resistant seed identified and used for regeneration by land-owners and managers throughout the South.

Spruce budworm attacked in Maine. Some three million acres of spruce-fir type in Maine were infested by spruce budworm. Maine, in a cooperative suppression project with the Forest Service, used Zectran to treat 500,000 acres where high damage was imminent if the infestation were allowed to go unchecked. The overall reduction in budworm population in the treated area was about 85 percent.

Bark beetles. Suppression of various bark beetle outbreaks involved treatment of numerous individual spot infestations in the West and South. The massive southern pine beetle epidemic now underway is being vigorously attacked on many fronts (Figure 14). Hopefully these efforts will result in population declines next year. Although direct chemical treatment was necessary in some places, greater advantage, than in any previous year, was taken to utilize sanitation-salvage logging as a means of removing infested trees from the woods before beetle emergence.

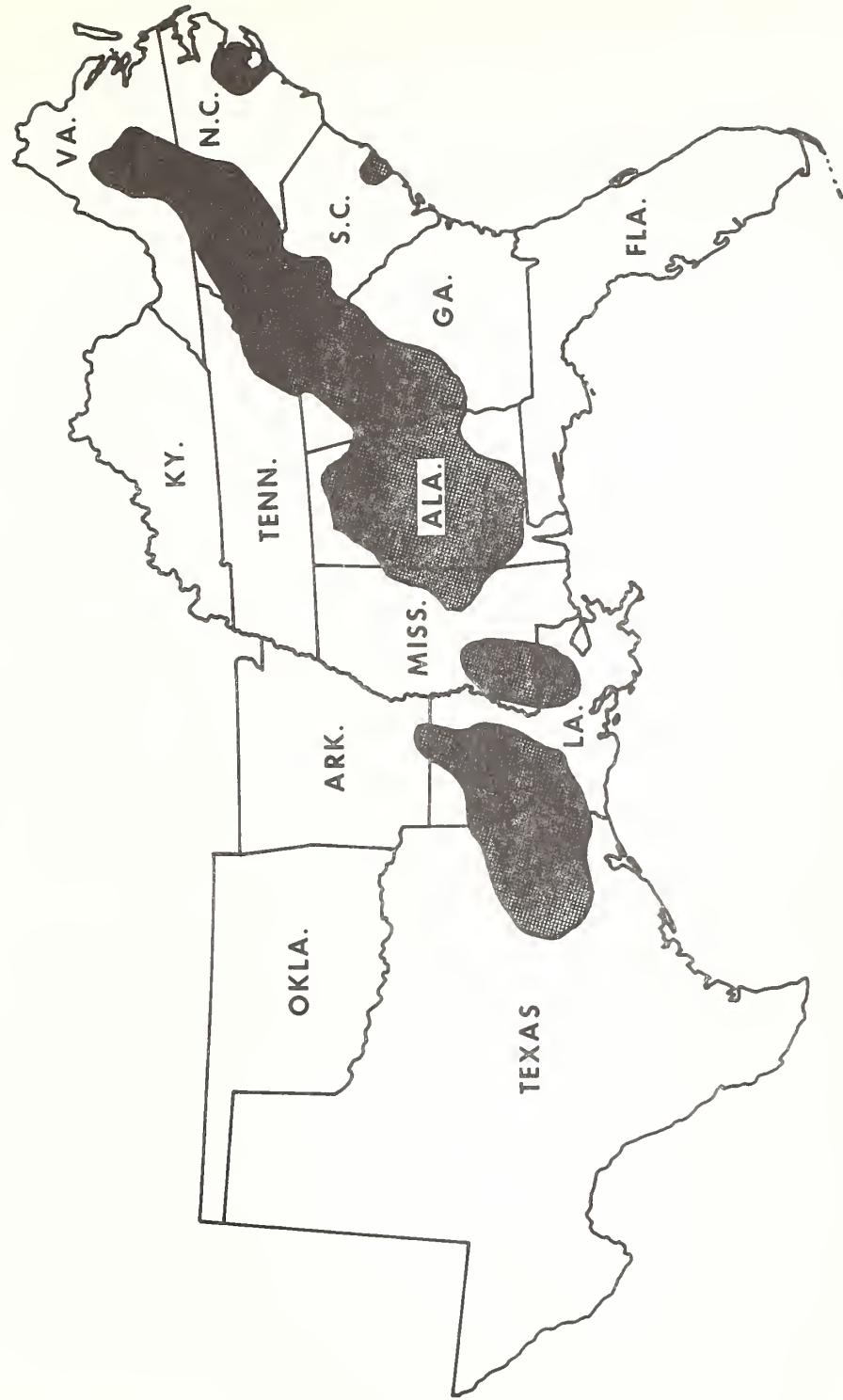
GEOGRAPHIC BREAKDOWN OF APPROPRIATION

Insect and Disease Control

	1973 <u>estimate</u>	1974 <u>estimate</u>
Alabama	\$381,000	\$150,000
Alaska	108,000	108,000
Arizona	160,000	160,000
Arkansas	114,000	104,000
California	1,000,000	1,000,000
Colorado	350,000	350,000
Connecticut	20,000	20,000
Delaware	6,000	6,000
District of Columbia	180,000	180,000
Florida	43,000	43,000
Georgia	325,000	130,000
Hawaii	20,000	20,000
Idaho	740,000	740,000
Illinois	8,000	8,000
Indiana	8,000	8,000
Iowa	7,000	7,000
Kansas	6,000	6,000
Kentucky	55,000	55,000
Louisiana	500,000	450,000
Maine	749,000	600,000
Maryland	160,000	160,000
Massachusetts	20,000	20,000
Michigan	160,000	160,000
Minnesota	115,000	115,000
Mississippi	180,000	130,000
Missouri	100,000	100,000
Montana	753,000	753,000
Nebraska	8,000	8,000
Nevada	30,000	30,000
New Hampshire	110,000	110,000
New Jersey	313,000	190,000
New Mexico	250,000	250,000
New York	840,000	630,000
North Carolina	325,000	295,000
Ohio	60,000	60,000
Oklahoma	7,000	7,000
Oregon	640,000	640,000
Pennsylvania	353,000	225,000
Rhode Island	170,000	31,000
South Carolina	149,000	124,000
South Dakota	300,000	300,000
Tennessee	157,000	157,000
Texas	270,000	220,000
Utah	65,000	65,000
Vermont	90,000	90,000
Virginia	530,000	520,000
Washington	420,000	420,000
West Virginia	150,000	150,000
Wisconsin	190,000	190,000
Wyoming	290,000	290,000
Total program level	11,985,000	10,585,000
Transfer from other Forest land management accounts	<u>-1,400,000</u>	<u>-</u>
Total appropriation	10,585,000	10,585,000

SOUTHERN PINE BEETLE INFESTATION

NOVEMBER, 1972



60,000,000 gross acres of forested land are located in the southeastern States. Infestations are located in ten of these States mostly private holdings but also includes 17 National Forests and 33 Ranger Districts.

Figure 14

COOPERATIVE LAW ENFORCEMENT PROGRAM

1972	\$2,500,000
1973	2,527,000 <u>1/</u>
1974	2,527,000

No increase is proposed.

Public Law 92-82 (August 10, 1971) authorized the Secretary of Agriculture to co-operate with any State or political subdivision thereof in the enforcement of State or local laws on lands of the National Forest System. Such cooperation includes reimbursement to a State or its subdivision for expenditures incurred in connection with activities on National Forest System lands.

State and local laws and ordinances are applicable on National Forest System lands with few exceptions. The Forest Service must look to State and local law enforcement officials to enforce these laws and ordinances on the National Forests. State and local law enforcement agencies will continue to perform, on a nonreimbursable basis, their normal law enforcement duties without cost to the Federal Government. This program provides for the negotiation of law enforcement agreements between the local law enforcement agencies and the Forest Service to handle abnormal impacts caused by public use of the National Forest.

Funds for this program were made available May 27, 1972, and in fiscal year 1972, only \$84 thousand was obligated. The unobligated balance remains available for use in subsequent years and will be used to carry out a balanced program in fiscal years 1973 and 1974, when an allowance is made for non-recurring start-up costs incurred in fiscal year 1973.

A report system is being developed to reflect the number of State violations and cases made by State and local law enforcement agencies on National Forest lands.

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1/ Includes \$6,000 travel reduction savings proposed for transfer to insect and disease control.

GEOGRAPHIC BREAKDOWN OF APPROPRIATIONS

Cooperative Law Enforcement

	<u>1/</u> FY 1973 <u>estimate</u>	FY 1974 <u>estimate</u> (in thousands)
Alabama	\$14	\$15
Alaska	41	40
Arizona	95	95
Arkansas	40	40
California	520	525
Colorado	170	80
District of Columbia	24	45
Florida	35	35
Georgia	20	20
Idaho	130	135
Illinois	21	25
Indiana	6	10
Kentucky	30	30
Louisiana	15	15
Maine	1	1
Michigan	45	50
Minnesota	27	35
Mississippi	20	20
Missouri	31	35
Montana	175	190
Nebraska	5	- -
Nevada	50	50
New Hampshire	25	25
New Mexico	125	140
North Carolina	35	35
Ohio	9	10
Oklahoma	3	5
Oregon	281	275
Pennsylvania	21	25
South Carolina	15	15
South Dakota	30	10
Tennessee	25	25
Texas	15	15
Utah	107	125
Vermont	5	5
Virginia	35	40
Washington	190	192
West Virginia	23	30
Wisconsin	23	29
Wyoming	45	35
Total	<u>2,527</u>	<u>2,527</u>

1/ Includes \$6,000 travel reduction savings proposed for transfer to insect and disease control.





GEOGRAPHIC BREAKDOWN OF APPROPRIATION

Forest Research

<u>State</u>	<u>Headquarters or Project Location</u>	FY 1973 estimate (in thousands)	FY 1974 estimate	Change
Alabama	Auburn	\$399	\$402	+\$3
	Tuskegee	42	42	— +3
Alaska	Fairbanks	378	381	+3
	Juneau	536	541	+5 +8
Arizona	Flagstaff	807	812	+5
	Tempe	594	598	+4
	Tucson	255	257	+2
		1,656	1,667	+11
Arkansas	Fayetteville	243	245	+2
California	Arcata	255	257	+2
	Berkeley	2,541	2,559	+18
	Fresno	306	309	+3
	Redding	155	156	+1
	Riverside	2,617	2,632	+15 +39
Colorado	Fort Collins	2,077	2,092	+15
Connecticut	Hamden	1,051	1,058	+7
District of Columbia	Washington	449	452	+3
Florida	Lehigh Acres	112	113	+1
	Marianna	180	181	+1
	Olustee	647	651	+4
		939	945	+6
Georgia	Athens (including Atlanta)	1,479	1,489	+10
	Macon	1,007	1,015	+8
		2,486	2,504	+18
Hawaii	Honolulu	408	411	+3
Idaho	Boise	258	260	+2
	Moscow	959	966	+7
		1,217	1,226	+9
Illinois	Carbondale	720	725	+5
Kentucky	Berea	358	360	+2
Louisiana	Pineville	1,918	1,929	+11
	New Orleans	867	872	+5
		2,785	2,801	+16
Maine	Orono	184	185	+1



GEOGRAPHIC BREAKDOWN OF APPROPRIATION

Projects (16) - (26)

Forest Research -- continued

<u>State</u>	<u>Headquarters or Project Location</u>	<u>FY 1973 estimate</u>	<u>FY 1974 estimate</u> (in thousands)	<u>Change</u>
Maryland	Beltsville	\$198	\$200	+2
Massachusetts	Amherst	321	324	+3
Michigan	East Lansing (including Cadillac)	560	564	+4
	Houghton	428	431	+3
	Marquette	255	257	+2
		<u>1,243</u>	<u>1,252</u>	<u>+9</u>
Minnesota	Duluth	286	288	+2
	Grand Rapids	330	332	+2
	St. Paul	<u>1,228</u>	<u>1,237</u>	<u>+9</u>
		<u>1,844</u>	<u>1,857</u>	<u>+13</u>
Mississippi	Gulfport	1,463	1,472	+9
	Oxford	287	289	+2
	State College	203	205	+2
	Stoneville	594	599	+5
		<u>2,547</u>	<u>2,565</u>	<u>+18</u>
Missouri	Columbia	248	249	+1
Montana	Bozeman	507	510	+3
	Missoula	<u>3,229</u>	<u>3,250</u>	<u>+21</u>
		<u>3,736</u>	<u>3,760</u>	<u>+24</u>
Nebraska	Lincoln	201	203	+2
Nevada	Reno	153	154	+1
New Hampshire	Durham	765	770	+5
New Jersey	Pennington	352	354	+2
New Mexico	Albuquerque	221	222	+1
New York	Syracuse	84	85	+1
North Carolina	Asheville	826	831	+5
	Franklin	250	252	+2
	Research Triangle (Raleigh-Durham)	<u>859</u>	<u>864</u>	<u>+5</u>
		<u>1,935</u>	<u>1,947</u>	<u>+12</u>
North Dakota	Bottineau	215	217	+2
Ohio	Delaware (including Columbus)....	1,416	1,426	+10
Oregon	Bend	207	208	+1
	Corvallis	2,409	2,424	+15
	LaGrande	458	461	+3
	Portland	<u>1,199</u>	<u>1,207</u>	<u>+8</u>
		<u>4,273</u>	<u>4,300</u>	<u>+27</u>



Forest Research -- continued

<u>State</u>	<u>Headquarters or Project Location</u>	<u>FY 1973 estimate</u>	<u>FY 1974 estimate</u>	<u>Change</u>
(in thousands)				
Pennsylvania	Upper Darby	\$563	\$567	+4
	Warren	331	334	+3
		894	901	+7
Puerto Rico	Rio Piedras	343	346	+3
South Carolina	Charleston	273	274	+1
South Dakota	Rapid City	302	305	+3
Tennessee	Sewanee	194	195	+1
Texas	Nacogdoches	302	304	+2
Utah	Logan	444	447	+3
	Ogden	563	567	+4
	Provo	400	403	+3
		1,407	1,417	+10
Vermont	Burlington	506	509	+3
Virginia	Blacksburg	95	95	- -
Washington	Olympia	358	360	+2
	Seattle	865	872	+7
	Wenatchee	309	311	+2
		1,532	1,543	+11
West Virginia	Morgantown	345	347	+2
	Parsons	314	316	+2
	Princeton	1,053	1,060	+7
		1,712	1,723	+11
Wisconsin	LaCrosse	109	110	+1
	Madison	6,828	6,874	+46
	Rhinelander	635	639	+4
		7,572	7,623	+51
Wyoming	Laramie	204	205	+1
Travel reduction savings proposed for transfer to fighting forest fires				
		385	- -	-385
Proposed for transfer ^{1/}	.....	3,865	- -	-3,865
Total .....	.....	61,140	57,275	-3,865

^{1/}Proposed for transfer to fighting forest fires.



TIMBER MANAGEMENT RESEARCH

1972	\$11,758,000
1973	12,606,000 <u>1/</u>
1974	11,746,000
Decrease	-860,000

A decrease of \$860,000 is proposed.

In fiscal year 1973 \$860,000 was appropriated over the budget request for timber management research and is proposed to be used for fighting forest fires in 1973 along with travel savings of \$78,000. On the basis of planned program level for 1974 there will be an increase of \$78,000.

Timber management research develops scientific knowledge of forest ecosystems with trees as a principal component and develops methods for culture of trees and management of forests for production of timber and for modification and improvement of man's environment. This includes:

- (1) Development of cultural methods for timber and timber-related crops.
- (2) Techniques of timber measurement.
- (3) Techniques of forest management planning.
- (4) Techniques for environmental tree culture.
- (5) Research in forest genetics.

The core of this research is determining the proper culture for over a hundred different commercial timber species based on a thorough knowledge of their ecology and growth requirements. This research determines how the Nation's needs for timber and other forest benefits can be met on Federal, State, and private lands through measures such as brush control, forest establishment, protection from animals, stand culture, soil and site improvement, and reestablishment of tree species valuable for timber or environmental purposes.

Timber management research also provides forest managers with reliable information on growth and yield of forests and on the influence of cultural practices on yield and quality of the stand.

This program includes research on methods of producing timber-related forest crops such as gum naval stores, maple sap, Christmas trees, and other income-producing natural products from forests.

Forest genetics research includes scientific study of variation and inheritance in trees and development of techniques for producing strains of hybrids having superior growth rate, wood quality, resistance to insects, diseases, and other damaging factors, or special value for use in environmental improvement.

1/ Includes \$860,000 program and \$78,000 travel reduction savings proposed for transfer to Forest land management for fighting forest fires.



Examples of Recent Accomplishments

Timber losses are reduced substantially by intermediate harvest cutting in Douglas-fir. New management guides have been developed to maximize timber yield in vigorous 70- to 150-year-old Douglas-fir stands in western Oregon and Washington. These guides are based on a study of intermediate harvest cuttings and show that it is possible to recover 81 percent of the potential growth (growth of surviving trees plus expected mortality) up to 38 years after treatment. They also show thinning substantially reduced losses from bark beetles (61 percent), windthrow (30 percent), breakage (33 percent), and suppression (46 percent). These management guides indicate that thinning in this forest type should provide crown space for the taller trees and should leave 60 to 85 percent of the density found in full stocked, unmanaged stands.

Computer based tree measurement system improves efficiency of timber inventory and sales. An improved program for processing measurement data from standing trees is now available for use on the most advanced computers. With data from a highly efficient sampling method, the system permits accurate and automated estimation of the amount of timber in a single sale or in an entire forest from intensive measurements on relatively few trees. The system is being taught to public and private foresters to improve the efficiency of forest inventory and timber sale preparation.

New harvesting guide provides alternatives to clearcutting in old-growth spruce-fir forests. Interim guidelines are now available for developing alternatives to clearcutting old-growth spruce-fir forests in the central Rocky Mountains. These partial cutting practices provide for timber harvesting while maintaining forest cover in recreation areas, travel zones, and scenic view areas. Other patterns of cutting give options for increasing water yield, improving wildlife habitat, or integrating timber production with other key uses.

Multiple-use rating system developed to aid in choice of silvicultural options in western larch. Larch forests in Montana were chosen to model a simple scheme showing the effects of silvicultural practices on other resource uses because western larch is one of the most valuable and esthetically pleasing timber species in the northern Rocky Mountains. The system developed employs a 5-level rating of impacts in helping land managers evaluate the relative effects of silvicultural systems, such as seed tree or shelterwood on wildlife habitat, livestock forage, watershed management, and esthetics. The rating scheme also includes estimates of costs of harvesting the timber and growing a new stand.

Computer simulation permits early decision on management of dwarf mistletoe-infested lodgepole pine stands. Computerized simulation techniques were developed to predict the future course of growth and mortality in stands of lodgepole pine infested with dwarf mistletoe. The simulation utilizes information on the life history of lodgepole pine having different degrees of dwarf mistletoe infestation. This new prediction tool permits early decision among alternative practices of removing infested trees, converting immediately to a new stand, or foregoing any treatment in stands that have good prospects for future growth.

Planting nursery-grown seedlings on well-prepared sites is the best way to regenerate ponderosa pine in the Northern Rocky Mountains. Recent controversy over site preparation practices and planting investments on National Forest land in Montana led to proposals for regenerating ponderosa pine in this area by natural means. However, evidence from a long history of regeneration research indicates that planting seedlings is still the best option for regenerating ponderosa pine in the Northern Rocky Mountains. A recent summary of this research in the Northern Rocky Mountain region shows:

- (1) Natural regeneration usually is slow and uncertain.
- (2) Competition from understory vegetation is intense.

- (3) Site preparation is usually required after cutting for success of natural or artificial regeneration.
- (4) Planting nursery seedlings on well-prepared sites can be relied upon to obtain adequate restocking within acceptable time limits.

White ash transplants help to solve oak regeneration problem. Desirable reproduction of pure or nearly pure oak stands throughout the Upper Mississippi Valley may be scarce before and after cutting. Trials in southern Wisconsin indicate that the relatively fast growth, high survival, and adaptability of white ash transplants make them the safest selection for interplanting after oak stands have been harvested. Transplants should be about 2 feet tall, and planting should be accompanied by control of stump sprouting. These findings give the forest manager a reasonable alternative to regenerating oak in areas where this is very difficult.

Acid leached from leaves of cherrybark oak inhibits regeneration. In coastal South Carolina, there frequently is little or no understory beneath cherrybark oaks. Research has found naturally-occurring salicylic acid, leached by rain from the leaves of cherrybark oaks, reduces the survival and growth of both natural vegetation and seedlings planted beneath the oaks. Thus, a source of the difficulty in regenerating bottom land hardwood forests has been determined.

Studies in Poland will aid in better use of Norway spruce in United States forests. Norway spruce is widely planted in the United States. The best strains of this species are found in Poland, where studies of 25 local seed sources revealed considerable variation in seed size, weight, and mineral content, as well as marked differences in seedling growth and mineral requirements. Both elevation and latitude were correlated with mineral content and seedling growth. This information will assist in determining suitable planting locations in the United States for Norway spruce.

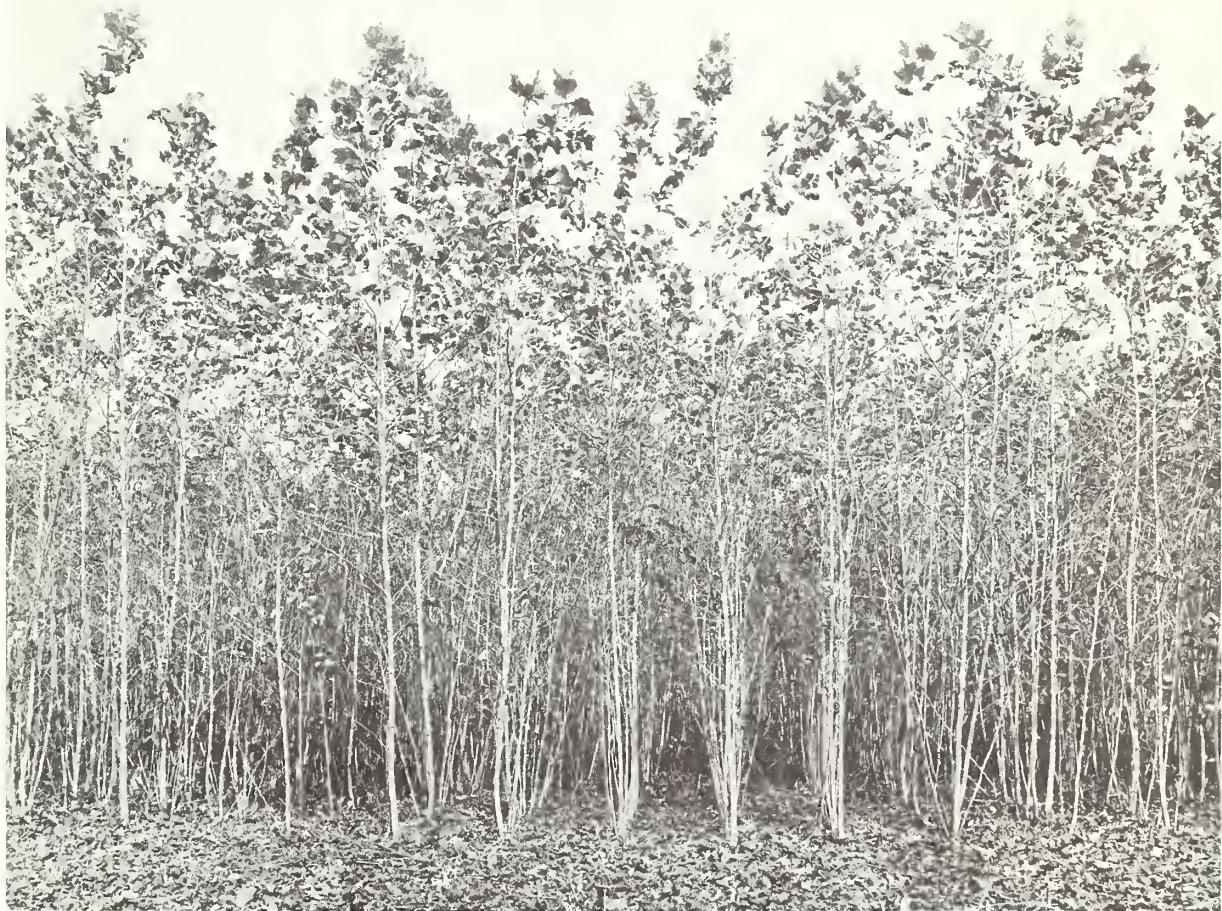
Minor element requirements determined for growth of Monterey pine. A project in Spain determined amounts of iron, zinc, and copper in the needles of Monterey pine seedlings and related growth to concentration level. Optimum growth occurred when there were 50 to 150 parts per million (ppm) of iron, 10-200 ppm of zinc and 2-8 ppm of cooper in the needles. Visual deficiency and toxicity symptoms were also described. Monterey pine is the most extensively planted tree in the world, so these findings have wide application in quantifying field nutrient levels for key minor elements.

Planting of high-gum-yielding slash pines is supported under the Naval Stores Conservation Program. State nurseries are now growing 2.5 million high-gum-yielding slash pine seedlings, developed by the Forest Service at Olustee, Florida. When the participants in the Naval Stores Conservation Program plant the high-yielding trees in accordance with provisions prescribed by the Forest Service, they may be reimbursed for 80 percent of the actual cost, but not to exceed \$20 per acre. Since this practice became available in November 1971, applicants have qualified for planting 59,000 seedlings on 600 acres.

Southern Coastal Plain soils are not harmed by prescribed burning. Fire is an important tool in managing southern forest vegetation, but its possible long-time effects on forest soils have required extended study. Studies over 20 years of annual or periodic prescribed burning in the South Carolina Coastal Plain show that losses of organic matter and nutrients from the forest floor through the use of fire are offset or exceeded by increases of both in the mineral soil. It is now known that burning neither enriches nor depletes these soils.

Several sources of Siberian larch are suitable for western windbreaks. A 10-year test in North Dakota of 3 Siberian-, Dahurain-, and 2 hybrid larch seed origins suggests that two of the Siberian sources are suitable for windbreak plantings. Larches are particularly useful trees for shelterbelt programs in the northern Great Plains because they have good height potential, rapid growth, moderate crown density, and are resistant to winter desiccation. This new information should make possible improved effectiveness of windbreaks planted in the northern Great Plains.

New book published on Alaska trees and shrubs. A comprehensive handbook--Alaska Trees and Shrubs--describes and illustrates the 33 trees and 94 shrubs native to Alaska. Distribution maps are included for each species as well as keys for their identification. The vegetation of Alaska is described in detail, and the types of forests and tundra are shown on a large map of the State. This information is indispensable to students, scientists, and managers interested in the preservation and wise use of Alaska's natural resources.



A plantation of sycamore sprouts in Georgia. The first harvest of this plantation at age 2 produced almost 12 tons of fiber wet weight per acre. A second harvest 3 years later produced an additional 22 tons wet weight per acre, which is considerably greater than annual production from a conventional pulpwood plantation.

Figure 16

WATERSHED MANAGEMENT RESEARCH

1972	\$6,166,000
1973	6,616,000 <u>1/</u>
1974	6,266,000
Decrease	-350,000

A decrease of \$350,000 is proposed.

In fiscal year 1973 \$350,000 was appropriated over the budget request for watershed management research and is proposed to be used for fighting forest fires in 1973 along with travel savings of \$42,000. On the basis of planned program level there will be an increase of \$42,000.

Watershed management research develops scientific knowledge of the interaction of soil-water-vegetation and atmospheric systems as they affect the quantity and quality of water produced from forested watershed lands--the source of two-thirds of available water in the United States:

Watershed management research seeks to:

- (1) Develop methods and techniques for managing forest and forest-related watersheds to protect and improve soil and water quality, improve the yield and timing of water flows, and restore and rehabilitate degraded landscapes.
- (2) Develop adequate means of protecting soil and water resources, especially on fragile or unstable soils, while forest and forest-related lands are being managed for other products and services.
- (3) Provide basic knowledge of vegetation, soil, water, and atmospheric relationships in wildland and related forest areas.

During fiscal year 1974, research will concentrate on protecting water flows from forest and related lands under various management activities and on rehabilitating disturbed areas. This will include studies on:

- (1) Methods of preventing deterioration of water quality.
- (2) Opportunities and hazards of sewage effluent and sludge recycling on forest lands.
- (3) Protecting and maintaining soil stability.

Research will be expanded on nutrient losses due to soil erosion and on nutrient release from the soil through leaching, decomposition, and weathering. Additional emphasis will be placed on protecting and enhancing habitat for fish in streams draining from forest lands. Research will be increased on preventing erosion and sediment production and rapidly reclaiming surface-mined lands in forest and related rangelands, particularly in the western United States.

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 1/ Includes \$350,000 program and \$42,000 travel reduction savings proposed for transfer to Forest land management for fighting forest fires.

Examples of Recent Accomplishments

Improved terraces reduce erosion of surface-mine benches. A two-year study in Kentucky indicates that terraces can effectively control runoff and erosion on surface-mine benches. Terracing treatments, installed for about \$10 per acre, reduced storm peak runoff and suspended sediment yield by over one-half. A better vegetative cover was also established on the terraced plots. Future surface-mine reclamation efforts should include some such type of mechanical stabilization.

Water spreading and detention devices tested as possible treatment for controlling erosion. Forest Service scientists in Wisconsin have developed a technique of installing diversion and detention ponds between ridge-top fields and the wooded slopes below to reduce potential flood and erosion damage. Unless the water from the cropland is diverted or detained, this runoff creates undesirable erosion patterns on the forested slopes as well as contributing to flooding in the bottoms.

Nitrogen loss is minimal following forest erosion control fertilization. In an experimental erosion control seeding program in north central Washington, two watersheds were fertilized, one with urea and the other with ammonium sulfate. The third watershed was retained as an unrehabilitated control. Only small amounts of nitrogen were found in stream water from the fertilized watersheds, indicating that careful use of fertilizer in erosion control work does not degrade streams.

Applying secondary municipal sewage effluent may improve forest soil and tree growth. In a Michigan study, approximately 64 inches of secondary municipal sewage effluent were applied at 2.5 inches per week to a jack pine stand on a sand soil. Ground water quality samples taken from wells 5 to 10 feet below the soil surface show no measurable increase in phosphorus and only a small increase in average nitrogen levels early in the study. Radial growth of irrigated trees increased nearly 40 percent during a dry growing season. Approximately half of the phosphorus added to the site was shown in increased available form in the top 2 feet of soil. Retention of nutrients in the soil and increased wood production are two important benefits of recycling sewage wastes on forest land.

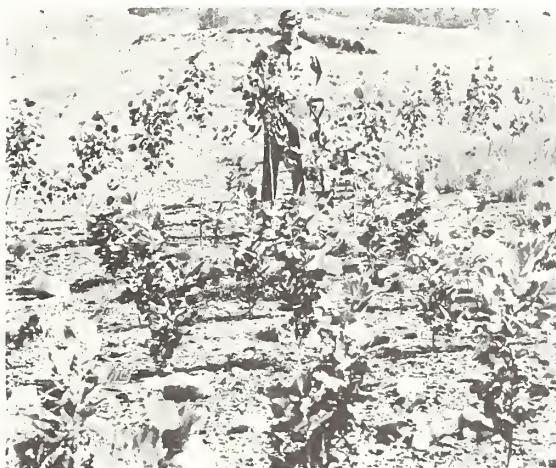
Snow fences made a safer highway. Research by Forest Service scientists solved some unique technical problems associated with blowing snow conditions along I-80 in Wyoming. Newly designed fence layouts and heights improved visibility dramatically. Highway Department manpower and equipment needs were reduced because the fences effectively trapped blowing snow.

Terracing surface-mined bench to control runoff and erosion



Terraces have reduced storm peak runoff rates and suspended sediment yield by one-half. The cost of terracing is about \$10 per acre. But besides reducing peak flow and sediment yield, the terraces provide a better seed bed for revegetating disturbed lands.

Revegetating surface-mined land



Both trees and grass can be used to successfully revegetate surface-mined land. Grass is often needed for a quick cover to control erosion immediately after the mining operation has finished. Trees, although slower in establishment and growth, provide a long-lasting, more permanent cover. The above experiment in Kentucky is an attempt to learn how grass and trees can be grown together to provide double benefits--a quick cover and more permanent return to forest.

Figure 17

WILDLIFE HABITAT AND RANGE RESEARCH

1972	\$3,473,000
1973	4,588,000 <u>1/</u>
1974	3,473,000
Decrease	-1,115,000

A decrease of \$1,115,000 is proposed.

In fiscal year 1973 \$1,115,000 was appropriated over the budget request for wildlife habitat research and is proposed to be used for fighting forest fires in 1973 along with travel savings of \$24,000. On the basis of planned program level for 1974 there will be an increase of \$24,000.

Funding in previous fiscal years was by two separate line items--wildlife habitat research and range management research. These items are now combined because the work has become so interrelated that effective separation is difficult. Furthermore, funding as a combined line item will permit more effective administration of funds to provide for their best use in meeting urgent research needs.

Wildlife habitat and range research is directly concerned with the quality of most of the Nation's terrestrial environment in terms of wildlife and livestock and their use by man. The Nation's forests, ranges, and associated waters provide a home for millions of livestock, big-game animals and countless other wildlife, including song birds, small game, and waterfowl. These animal populations provide recreation, food, fiber, and income for a broad spectrum of the Nation's population. Urban and rural residents generate mounting demands on both public and private land for increased wildlife and livestock resources. In addition, rare, endangered, and unique wildlife species pose special research management problems.

Animal, bird, and fish species vary widely in social and ecological requirements, but the basic ecological processes are common to all species; all are products of the habitat. Man's continued use of the animal resource is dependent upon proper and effective management of the habitat. Land management decisions must be made with full knowledge of the probable impact upon habitat values. Where competitive uses exist and where habitat values are low, ameliorative management systems must be developed.

Wildlife habitat and range research seeks to maintain and increase the diversity and productivity of fish, wildlife, and domestic livestock populations by:

- (1) Defining the habitat requirements of the many species.
- (2) Assessing the impact of alternative land-use practices upon habitat values and developing ameliorative practices.
- (3) Generating strategies to optimize the habitat values of forests and ranges.

Examples of Recent Accomplishments

Cattle grazing in pine forests is compatible with timber management objectives. Research has shown that in the slash pine forests of Louisiana areas planted or seeded to trees, then moderately grazed yearlong by cattle, had pine stands as

 1/ Includes \$1,115,000 program and \$24,000 travel reduction savings proposed for transfer to Forest land management for fighting Forest fires.

good as those in ungrazed areas. Pine seedling losses were small, even under heavy grazing. These losses were further reduced by withholding cattle three to four months after tree planting. These findings enable land managers to invest in grazing operations to provide continuous income while timber on the same site is growing toward cutting age.

Shrubs offer great potentials for man's benefit in arid and semi-arid lands. Shrubs have not been intensively studied, as have most other groups of plants. As a move to remedy the deficiency of knowledge in this important area, an inter-agency International Shrub Symposium was held to focus on the biology and use of shrubs. The 500-page Proceedings of the Symposium, published by the Forest Service, covers the continental aspects of shrub distribution, present utilization, and potential for future expanded uses of shrubs. Special attention was given to shrub genetics, one of the most neglected areas in shrub research. The Forest Service has about 1,000 shrub species under investigation as potential plant materials for improving browse and forage production.

Disturbed soil can be stabilized by mulching seeded shrubs. Research in harsh dry areas of the Southwest shows that shrubs can be successfully established on disturbed soils by applying petroleum mulch after seeding. Germination and emergence of desirable browse-producing shrubs was successful even on relatively smooth disturbed soil surfaces. This new technique for soil stabilization is especially applicable in restoring soil and vegetation disturbed in surface mining operations.

Honeysuckle can provide emergency winter food for deer in Ozarks. Deer numbers, limited by the winter food supply, fluctuate greatly according to the level of annual production of evergreen leaves, fruits, and seeds, particularly acorns. Japanese honeysuckle, one of several shrubs tested, has proven the almost ideal plant to provide emergency food. It is relatively easily and inexpensively propagated, and its growth characteristic is compatible with other forest management practices in Ozark hardwood forests. Emergency winter rations in the form of small scattered plots of Japanese honeysuckle could help stabilize the white-tailed deer herds throughout the southern upland forest.

Direct seeding of winterfat depends on soil temperature and moisture content. Winterfat, a naturally occurring common shrub, is an exceptionally desirable food for livestock and wildlife on semi-arid ranges of New Mexico, but direct seeding has often failed. Studies show that soil temperatures of 50 to 80 degrees F are needed for germination and a planting depth of one-sixteenth inch in moist but not wet soil is necessary for seeding success. The biological information necessary for developing successful direct seeding methods for a major range shrub is now available.

Black bear winter survival is affected by natural insulation characteristics of the den. The study of energetics of over-wintering bears has been perfected to allow wildlife biologists a much better look at causes of bear mortality during long hibernation. Over-winter survival depends first on the food supply in summer habitats, then on the extent to which the bear can reduce its metabolic rate and weight loss during the winter. Weight loss is greatly influenced by adequacy of insulating effect and the den site. One of the more inviting den sites for black bear in northern Minnesota is in windrows of rock raked from agricultural land. However, scientists find these sites greatly jeopardize over-winter survival because their poor insulating property requires the animals to expend great quantities of energy.

Guides have been developed for managing subalpine grasslands. Results of 20 years of range research have been summarized as management guides for subalpine live-stock ranges in the Big Horn mountains of Wyoming. These important ranges, grass-land parks rimmed by coniferous forests, together with associated meadows and shrublands occupy more than one-half million acres within the Big Horn National Forest. Application of these new guides will allow managers to use the resource for optimum cattle and wildlife production while maintaining environmental quality.

Videotapes increase quantity and quality of wild turkey research data. Portable television recording equipment greatly increases the effectiveness of wildlife biologists in their scientific data collection of wild turkey habitat use. Video-taped field observations can be replayed to provide full opportunity for studying the turkeys' habits and reactions in much greater detail and more completely than can be done with written field notes of monitoring. With this new technique, scientists are building information to help in maintaining the wild turkey as an important game species.

Sheep gain greater weight on native bunchgrass than on cheatgrass. Research shows that native bunchgrass ranges in southern Idaho provide greater overall sheep weight gains and grazing capacities than ranges infested by cheatgrass. Cheatgrass ranges were equally as good as the native bunchgrass ranges during wet years. However, during dry years grazing capacities were 60 percent greater on the bunchgrass range which has a considerable longer grazing season requiring less movement of grazing stock.



Japanese honeysuckle planted on cleared areas in Arkansas Ozark forest was heavily browsed by deer when other foods were scarce.

Slash pine plantation during the second winter after establishment on heavily grazed range. Grass utilization averaged 80 percent after the site-preparation burn but tapered off to 50 percent the second year.



Grassland parks of the subalpine areas provide a range resource highly prized by local stockmen, especially sheepmen.

FOREST RECREATION RESEARCH

1972	\$1,064,000
1973	1,353,000 <u>1/</u>
1974	1,103,000
Decrease	-250,000

A decrease of \$250,000 is proposed.

In fiscal year 1973 \$250,000 was appropriated over the budget request for forest recreation research and is proposed to be used for fighting forest fires in 1973 along with travel savings of \$8,000. On the basis of planned program level for 1974 there will be an increase of \$8,000.

Forest recreation research through studies of man's interactions with his forest environment contributes to formulation and implementation of environmental resource policies.

Recreation research seeks to:

- (1) Develop new and better resource management practices which enhance amenity values.
- (2) Understand man's need for and use of forests, open space, and parks as environments for living, working, and recreation.
- (3) Analyze and understand the interactions between people and forests, social, and economic factors underlying outdoor leisure activities, esthetic quality of forest landscapes and environmental situations, trends in recreation uses, use and management of wilderness areas, and alternative management strategies for meeting the public demands.
- (4) Identify interrelations among recreation, environmental amenities, and other uses of forests and open spaces--and find better ways of coordinating these uses.

Examples of Recent Accomplishments

New methods have been developed for measuring recreational use. Forest managers must know how much use is made of recreational resources, but counting all visitors is seldom feasible, and sampling them can be complex and difficult. Research has developed a series of special methods for collecting valid statistical samples of recreation use and users. Such statistical samples can be the basis for sound estimates of actual use. These recently developed techniques will enable managers to estimate water-based recreation on large bodies of water, trout stream use in the Southeast, and visitor use of wilderness areas more economically.

Commercial campgrounds are a growing industry. Studies confirm that the commercial campground industry is growing rapidly throughout the United States. In the 11 Northeastern States, for example, the number of commercial campgrounds increased from 160 to 1,428 in only 6 years. The camping market is not only growing, but changing. Most of the increases are accounted for by newcomers to the market. At the same time, some experienced campers are quitting because of increased costs, crowding, changes in camping clientele, or shifts in personal interests. Many newcomers, on the other hand, seek social interaction in camping,

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1/ Includes \$250,000 program and \$8,000 travel reduction savings proposed for transfer to Forest land management for fighting forest fires.

have a high tolerance for crowding, and want conveniences. Few of today's campers are interested in "roughing it"--only about one out of five. The trend, especially in commercial campgrounds is to provide sophisticated comfort and convenience features. Research on commercial campgrounds and their customers is providing information that should help the operators better serve the public.

Landscape analysis is an important part of regional planning. In the Lake Tahoe Basin of California and Nevada, potential development generated by the mass of people attracted to the Basin threatens to impair much of the landscape. A Forest Service scientist analyzed the Basin landscape and potential impacts of development on the scenery. An array of alternative choices with probable impacts was thus provided to the Tahoe Regional Planning Agency to assist in establishing guidelines and priorities.

Analysis of skier characteristics and preferences provides guides for planning and management. Research shows skiing, an important form of outdoor recreation for an estimated 4 million Americans, is done largely by people who are young (two-thirds are 30 or under), single, educated, and have higher-than-average incomes. About 85 percent of all skier-days are spent by people who live close to the mountains. Many new skiers are entering the market; 40 percent of today's skiers have 3 years or less experience. New areas should be as near as possible to population centers and should include adequate facilities for beginners and intermediate-level skiers. This information from research on skiers and their preferences is now available to help resource managers better serve the skiing public while protecting public resources.

Family camping, a popular activity, is expected to grow even more. Recent research shows that family camping now involves over 40 million people a year, and that even more people will join in. Many of today's camping families are newcomers; only 10 percent of them camped before 1950. Furthermore, 42 percent just began camping within the last 5 years. Publicly-owned campgrounds were used by slightly more families than were commercial campgrounds, but this varies among areas of the country. Continued heavy use and management challenges for campgrounds on National Forests and other public lands can be expected.

Studies of wilderness use provides clues for management. A study of use of three Western Wilderness Areas and the Boundary Water Canoe Area identified conflicts between large and small groups, between hikers and horse riders, and especially between canoeists and those who use motorboats. Visits to Wilderness and Primitive Areas have increased at about 10 percent per year over the past 25 years and now total over 5 million visitor days per year. Some parts of the wilderness are crowded--the solitude sought is disappearing. In some cases, the physical environment is threatened by overuse. Research is seeking ways of:

- (1) Meeting some people's desires for backcountry recreation outside designated wilderness.
- (2) Defining wilderness carrying capacities in both biological and social terms.
- (3) Developing management alternatives that will both preserve the wilderness resource and its recreational use.



About half of the Wilderness visitors seek solitude, but popularity of Wilderness threatens crowding and loss of solitude. Research Wilderness visitors are providing guidelines for management of these important resources.

Figure 19

FIRE AND ATMOSPHERIC SCIENCES RESEARCH

1972	\$5,181,000
1973	7,878,000
1974	7,378,000
Decrease	-500,000

A decrease of \$500,000 is proposed.

In fiscal year 1973 \$500,000 was appropriated over the budget request for fire and atmospheric sciences research and is proposed to be used for fighting forest fires in 1973 along with travel savings of \$50,000. On the basis of planned program level for 1974 there will be an increase of \$50,000.

The fire research program develops knowledge and technology to reduce forest fire costs and to protect the quality and productivity of American forests. This research is the sole Federal forest fire research effort and is designed to aid all private, State, and Federal agencies in protecting 1.2 billion acres of forest and watershed lands. This research has aided in bringing about a 50 percent reduction in total forest fire losses between 1951 and 1965. Increasing risks and hazards in today's more intensive use of forest lands makes the forest fire control job more difficult. During the five years, 1966 through 1970, the average annual area burned increased to nearly 4.7 million acres and reached 6.7 million acres in 1969. The devastating fires of 1970 in the Northwest and California add further evidence to the increasing severity of forest fire problems.

Forest fire losses are at unacceptable levels. There are opportunities to make substantial savings through full development of new technology for fire prevention and control. The fire research program has high potential to reduce the timber supply impacts from fire loss now averaging 1.5 million acres of commercial forest land burned per year on protected forests, and environmental quality degradation from annual burning of some five million acres on all classes of lands. The current fire research program is focused on:

- (1) Fire prevention.
- (2) Fire hazard reduction.
- (3) Fire control systems.

Examples of Recent Accomplishments

National fire-danger rating system is speeded by automation. A large part of the calculations required to determine fire danger have now been automated. This new development, along with computer storage of all fire weather and fuels data, provides land management agencies with the capability of rapidly assessing the fire danger situation nationwide. This streamlining of the fire danger rating system will also facilitate its adoption throughout the Nation and provide a badly needed tool for fire protection and control.

Pressurized modular fire retardant dispensing system is adaptable to a wide range of aircraft. Implementation of a modular retardant dispensing system, now under final test in cooperation with the Air Force, will greatly increase the flexibility of aircraft now equipped only as tankers which restricts their

 1/ Includes \$500,000 program and \$50,000 travel reduction savings proposed for transfer to Forest land management for fighting forest fires.

FOREST INSECT AND DISEASE RESEARCH

1972	\$9,440,000	1/
1973	10,520,000	2/
1974	9,830,000	
Decrease	-690,000	

A decrease of \$690,000 is proposed.

In fiscal year 1973 \$690,000 was appropriated over the budget request for insect and disease research and is proposed to be used for fighting forest fires in 1973 along with travel savings of \$66,000. On the basis of planned program level for 1974 there will be an increase of \$66,000.

Funding in previous fiscal years was by two separate line items--forest insect research and forest disease research. These items are being combined because the work has become so interrelated that effective separation is difficult. Furthermore, funding as a combined line item will permit more effective administration of funds to provide for their best use in meeting urgent research needs.

The mission of forest insect and disease research is to provide the knowledge and technology to:

- (1) Define, measure, and evaluate the ecological and socioeconomic impacts of destructive insects and diseases on all forest resource uses and values and on wood in storage and use.
- (2) Detect, assess, and predict changes in the occurrence of these pests.
- (3) Reduce and/or maintain their numbers and impacts at tolerable levels by means of control techniques and management strategies that are ecologically sound, economically efficient, and environmentally acceptable.

Current research is strongly oriented toward developing comprehensive integrated pest management systems for major forest insects and diseases, such as the gypsy moth, southern pine beetle, western and mountain pine beetles, western spruce budworm, larch casebearer (in western larch), dwarf mistletoes, fusiform rust (in southern pines), annosus root rot, and Dutch elm disease.

Special emphasis is being given to:

- (1) Understanding and quantifying the full impacts of certain major pests such as the mountain pine beetle, southern pine beetle, spruce budworm, gypsy moth, dwarf mistletoes, and fusiform rust on the productivity, value, and usefulness of their host tree species.
- (2) Finding and developing specific microbial and other biological agents for direct control of the gypsy moth, Douglas-fir tussock moth, forest tent caterpillar, annosus root rot and similar primary pests.
- (3) Finding and developing chemicals safer than those now available for suppressing or manipulating pest populations; these materials include insect attractants, repellents-deterrants, and other behavioral chemicals, as well as more selective, nonpersistent toxicants.
- (4) Developing specialized equipment and improved techniques for applying pesticidal chemicals to individual trees and to forested areas.
- (5) Developing technology to detect, monitor, and evaluate adverse environmental effects, including chemical and oxidative air pollutants, on tree form, color, and growth.

1/ Includes \$26,000 personnel savings applied to emergency work associated with fire and flood damages.

2/ Includes \$690,000 program and \$66,000 travel reduction savings proposed for transfer to Forest land management for fighting forest fires.

Examples of Recent Accomplishments

Plot system in Northeastern States will provide improved bases for decision on gypsy moth control. A series of plots established in the Northeastern States are providing the data needed to better evaluate gypsy moth population trends and impacts. The plots are located both in areas where the insect is well established and where it is a new invader. Control treatments have been applied in some of these areas; in others, no human intervention has occurred. The data obtained will be used to develop further insight into the population ecology of the gypsy moth, to test predictive models, and to assess the short- and longer-term effects of pesticidal treatments.

Promising breakthrough in control of vascular wilt diseases. A method was found to solubilize the fungicide, benomyl, in water (Figure 21). Accompanying this finding, a pressure injection technique was developed to place the benomyl directly into the sap stream of trees. This new technique gives hope that the destructive Dutch elm disease and wilts of oak and maple can be controlled effectively in urban and rural forests.

Causes of gypsy moth mortality important in integrated control. Long-term studies, partially supported by PL-480 funds, have identified specific factors or agents causing mortality of gypsy moth over a wide range of environmental conditions in Yugoslavia. These include bacterial pathogens, viruses, parasites and predators. This information will be used in developing integrated control methods for managing the gypsy moth in the United States.

Resistance to fusiform rust found in loblolly pine. In controlled infection studies, loblolly pine progeny selected for resistance consistently had less rust than ordinary open-pollinated progeny. This important information provides opportunities to reduce damage from one of the most serious killers of southern pine. Results of these studies have been so encouraging that a special research and development program is being established to develop and apply techniques for mass screening of southern pine seedlings for resistance to fusiform rust.

Production and safety testing of viruses for use in insect control underway. The Forest Service has perfected mass propagation methods and participated with Agricultural Research Service scientists in developing acceptable safety protocols for microbial agents. Viruses of the gypsy moth, Douglas-fir tussock moth and European pine sawfly are ready to be mass produced when safety tests, now nearing completion, are finished. With this new information, definitive pilot control tests and registration of the uses of insect control microbial agents should be possible within two years.

Nursery seedlings resistant to white pine blister rust are now ready for planting. Western white pines from blister rust resistant parents have been examined for evidence of infection for up to 15 years. Twenty percent of the progeny were infected compared with 58 percent infection in controls and 71 percent in natural reproduction. Although complete resistance to blister rust was not present, there was sufficient resistance to start planting first-generation nursery stock. Research will continue to identify additional resistance mechanisms which can be incorporated into the program and assure continued resistance to the disease over several rotations.

Bt ground applications effective against gypsy moth. Mist blower applications of Bacillus thuringiensis have been used to control the gypsy moth in Massachusetts, New Jersey, and Pennsylvania. Foliage was protected and the insect population reduced. Two commercial preparations have since been registered by industry for use in suppressing this pest.

Mechanisms of air pollution damage determined for some conifer and hardwood trees. Air pollution continues to cause serious damage in forests across the United States, especially in California. Armed with information developed by research on the mechanisms of pollution, important steps have been taken to identify species or clones within species which are resistant or tolerant to certain air pollutants. It may now be possible to plant or encourage regeneration of tree species of known tolerance in areas chronically troubled with air pollution.

Antiattractant discourages attacks by Douglas-fir beetle. Research has found that an antiattractant, methylcyclohexenone, is produced by female Douglas-fir beetles to regulate the activity of male beetles. This material has been synthesized and tested in the field as a means of preventing mass attacks and consequent outbreaks of this destructive insect. This newly discovered insect-produced chemical shows promise of providing alternatives to the use of toxic chemicals in managing insects which breed in trees damaged by natural causes. More detailed field trials are planned to develop operationally feasible means of using this chemical.

Tree declines are related to environmental stress and insect defoliation. Environmental stress and defoliation of sugar maple cause a change in the chemical constituents of roots. Extracts from defoliated trees were found to increase growth of the root pathogen, Armillaria mellea, suggesting that stresses such as those resulting from drought and defoliation by the gypsy moth may predispose trees to attack by root pathogens. This situation exemplifies the importance of understanding the total impact of all pests associated with a given forest ecosystem.

Seedbugs contribute to seed losses. Field studies have shown that feeding by nymphs of the seedbug, Leptoglossus corculus, is a significant cause of seed loss which was formerly attributed to conelet abortion or "physiological drop" in shortleaf and loblolly pines. Thus, it is apparent that some form of seedbug control will be needed to increase cone and seed production.



Apparatus for the pressure injection of solubilized benomyl into trees to protect them from vascular wilt diseases such as Dutch elm disease, oakwilt, and Verticillium wilt. Pressure injection of chemicals into trees to protect them from vascular wilts can be accomplished through multiple injection sites.

Figure 21

FOREST PRODUCTS UTILIZATION RESEARCH

1972	\$9,141,000	1/
1973	9,231,000	2/
1974	9,131,000	
Decrease	-100,000	

A decrease of \$100,000 is proposed.

In fiscal year 1973 \$100,000 was appropriated over the budget request for forest products utilization research and is proposed to be used for fighting forest fires in 1973 along with travel savings of \$61,000. On the basis of planned program level for 1974 there will be an increase of \$61,000.

More wood is used annually, primarily as a material for building construction, than the combined total of steel, plastics, and concrete. More than 85 percent of single family housing is of wood frame construction. Newspapers such as the Washington Post require 625 tons of paper for each Sunday issue. The suitability of wood for uses such as these, when compared with nonrenewable and higher-polluting materials, dictates an urgent need for adequate supplies of wood at a competitive price in the future.

By enabling the more effective use of wood, forest products utilization research will permit important savings in the number of trees which must be harvested to meet timber supply requirements and, at the same time, reduce adverse environmental impacts. More efficient utilization will be achieved through research in problem areas such as:

- (1) Recycling and reuse of discarded wood fiber.
- (2) Advanced engineering design procedures for more efficient use of wood products in building construction.
- (3) More precise evaluation of the strength properties of wood for structural uses.
- (4) Reduction of waste associated with wood processing.
- (5) Methods for manufacturing commercial products from low-grade logs and residues.
- (6) Development of high-yield nonpolluting pulping processes.
- (7) Development of better methods for protection of wood in use to enhance its durability in situations where it is subject to fire and attack from insects and disease.

Examples of Recent Accomplishments

Improved utilization of southern pines now possible. A study establishing the physical properties of the wood of the four major southern pine species (longleaf, shortleaf, loblolly, and slash) provides the means of achieving more effective use of wood resource with improved performance for the consumer. For the first time, an understanding of the relationship between density, strength and elastic properties in statistically precise terms for the complete species range has been established. Density data over the entire growth range are of particular interest to the pulp and paper industry, since pulp yields vary in direct proportion to density of the wood pulped.

1/ Includes \$48,000 personnel savings applied to emergency work associated with fire and flood damages.

2/ Includes \$100,000 program and \$61,000 travel reduction savings proposed for transfer to Forest land management for fighting forest fires.

Major publications extend knowledge in efficient species utilization. Results of research and experience developed over many years have been compiled into handbooks that provide information invaluable in achieving more efficient use of wood and conservation of the timber resource. A wide range of technical information previously fragmented and widely scattered is now readily available in:

- (1) A two-volume book describing the characteristics of the southern pines as a raw material and the most efficient techniques in converting processes (Ag. Handbook No. 420, Utilization of the Southern Pines).
- (2) Guides covering important production phases of the veneer industry involving wood characteristics of native veneer species and techniques of cutting and drying veneer (Forest Service Res. Papers FPL 150, Wood and Log Characteristics Affecting Veneer Production, and FPL 167, Veneer Species that Grow in the United States).
- (3) A guide to industry practices in air drying lumber, emphasizing practicality, economy, and unit package drying (Ag. Handbook No. 402, Air Drying of Lumber).

Predictability of cutting yields increases red alder efficiency and competitiveness. Alder sawtimber volume has increased tremendously in the past 10 years. Utilization of this little-used species, by West Coast furniture manufacturers, relieves the drain and price competition on many traditionally used Eastern hardwoods. Increased demands for lumber with expanding markets and higher prices for alder generated the need for more exact utilization information. A recent study enables the prediction of expected cutting yields from various grades of red alder lumber. This information is vitally important to furniture parts manufacturers since it provides a management tool in selecting the most economical grade or grade mix to use for specific cutting orders.

Logging residues are a source of valuable black walnut dimension. Black walnut lumber continues to be highly prized for furniture, paneling, gunstocks and other fixtures. The supply of high-quality black walnut trees is critically short, however, and effective methods are needed for processing presently non-commercial low-quality materials to help augment the diminishing supply. A study has shown that much valuable black walnut dimension can be economically produced from short tree sections, tops, large branches, and other forest residues customarily left after logging. A bolter saw is used to produce short flitches, which are then processed into dimension parts. Diminishing walnut supplies will be augmented through use of this additional raw material source, and unsightly slash is eliminated.

Guide to design, finishing, and treatment of exposed wood decks developed. Wood decks offer a variety of flexible systems for outdoor living areas and provide spaciousness in home design. Special precautions are necessary to avoid deterioration. A comprehensive guide describes proper materials, design, construction details, treatment and finishes that insure years of satisfactory wood deck performance.

Pine-hardwood combination provides superior building material. Southern pine plywood used as exterior siding provides maximum racking strength to the structure but affords a relatively poor base for paint or other surface coatings. However, southern pine plywood and paintable southern hardwood face-veneers can be combined to produce a strong panel with superior finishing properties. Cottonwood, yellow poplar, and magnolia are typical of many of the southern soft-textured hardwoods that are usable and available in quantity near pine plywood plants. Such a panel could provide a sheathing-siding combination material for application in full-size (4' x 8') sheets that would meet both strength and finish requirements.

Timber can meet demands for highway bridges. Forest Service research has shown timber can be effectively utilized to meet demands for short-span bridges on secondary or rural roads that may be replaced as the result of an intensified Federal bridge inspection program. Glued-laminated bridge stringers can be readily manufactured to meet span and load requirements and laminated wood decks provide a

rigid, low maintenance, water-tight covering to protect them. Experimental structures on Forest Service roads verify design and performance and substantiate that the structures are economical, strong, durable, and esthetically pleasing.

Automatic dry kiln control system now marketed commercially. Following eight months of testing in a commercial-size furniture plant kiln, a labor-saving automated system that dries lumber faster is now being offered and marketed by one of the largest kiln equipment manufacturers in the United States. Manufacturer's estimates indicate that each unit will save the owner about \$2,500 annually on average kiln loads. Besides this monetary benefit, the equipment assures more accuracy in schedule settings which provides an improved product with less degrade.

Bark increases fiber yield per cord of wood. Bark is usually considered a contaminant in the production of wood pulp. However, pulping wood chips with the bark left on offers several benefits, such as:

- (1) Eliminates the de-barking operation.
- (2) Eliminates the loss of white-wood during de-barking.
- (3) Permits the use of small tree branches, tops and other woods wastes that are difficult to de-bark.
- (4) Yields some fiber from the bark.

Research on softwoods has shown that pulping chips with the bark on yields good quality pulp and about 4 percent more fiber per rough cord of wood. This is equivalent to a 17 percent yield of fiber from bark in comparison to a 50 percent yield from wood. Approximately 0.2 percent more pulping chemical was used and 0.2 percent more chlorine bleach.

Practical method for recycling wax treated corrugated material developed. Wax treated corrugated containers account for six to seven percent of the corrugated material presently used and will increase to 10 percent, or about one million tons annually, in the near future. Virtually all of this good quality, wax-treated material is burned or buried after use rather than recycled since specialized, solvent extraction equipment necessary for wax removal is not available at most secondary mills. The Forest Products Laboratory at Madison, Wisconsin has developed a practical, more generally applicable method for wax removal that uses existing conventional mill equipment. Wood fiber from such reclaimed material shows much promise as a significant source of fiber for use as a corrugating medium either as 100 percent reclaimed fiber or blended with virgin fiber stock to improve properties.

FOREST ENGINEERING RESEARCH

1972	\$1,479,000	1/
1973	1,478,000	2/
1974	1,478,000	

No increase is proposed. In fiscal year 1973 travel savings of \$10,000 are proposed to be used for fighting forest fires. On the basis of planned program level for 1974 there will be an increase of \$10,000.

Forest engineering research provides direct support to managers and planners through development of essential new forest management technologies. Problems in timber harvesting, transportation planning, mechanization, and utilization have engineering components that require systematic study. Solutions have far-reaching implications affecting many forest management practices. These include:

- (1) Extending the timber supply by facilitating the utilization of trees or parts of trees that might otherwise be inaccessible.
- (2) Maintaining price stability of wood products by bringing least-cost technologies to bear.
- (3) Providing expanded rural employment under safe working conditions.
- (4) Supporting environmental stewardship goals.

Examples of Recent Accomplishments

Patented yarder proves the practicality of skyline logging. A 2-line yarder system has now been developed that has many advantages over the prior 3-line system. A prototype utilizing the new 2-line system has been successfully tested in Oregon and this system is now commercially available. The new system allows unprecedented increases in allowable yarding distance, economy, and adaptability to partial cutting with minimal damage to remaining stands. This skyline logging technology will be extremely useful in controlling land management impacts and providing accessibility to timber not loggable by conventional methods.

Wood chip carrier pipeline prototype is installed. A 2,000-foot wood chip pipeline loop has been constructed, and operational test runs are scheduled. Follow-up studies will determine the amount of carrier water treatment necessary to insure that discharge water can be used beneficially in compliance with water quality standards. Development of an improved transportation system of this nature can assure more intensive utilization of wood fiber and alleviate adverse environmental effects of logging residues.

Promising system for mechanized pine gum harvesting is evaluated. The gum naval stores industry relies heavily on a large woods labor force which is rapidly diminishing. It may eventually be necessary to collect gum by a system that requires little or no labor. Results of a pilot study to identify problems in equipment and operation and to analyze the first fully mechanized pine gum harvesting system in the United States are encouraging. No major obstacles to further development are evident.

1/ Includes \$14,000 personnel savings applied to emergency work associated with fire and flood damages.

2/ Includes \$10,000 travel reduction savings proposed for transfer to Forest land management for fighting forest fires.

FOREST SURVEY

1972	.....	\$3,438,000
1973	.....	3,433,000
1974	.....	3,433,000
<u>No increase</u> is proposed. In fiscal year 1973 travel savings of \$23,000 are proposed to be used for fighting forest fires. On the basis of planned program level for 1974 there will be an increase of \$23,000.		

Forest land in the United States (754 million acres) varies greatly in productivity, ownership patterns, availability for industrial use, and opportunities for management intensification. Accelerating changes in forest conditions result from changing land uses, timber growth, cutting, and losses to destructive agents. Demands on forest lands for nontimber uses are also increasing. Consequently, up-to-date inventories of forest land and timber resources are essential to guide programs for production of timber and other forest values.

Forest survey seeks to:

- (1) Determine current trends in the timber resource situation.
- (2) Determine the outlook for timber growth and supplies available for future harvests.
- (3) Identify prospective timber and nontimber resource management problems.
- (4) Analyze the effects of alternative programs for meeting prospective forest resources demands.
- (5) Identify opportunities for economic development based on forest resources.

Examples of Recent Accomplishments

Nation's timber situation analyzed. A summary report of a new study of the Outlook for Timber in the United States indicates that growth in demands for lumber, pulp and other industrial wood products is resulting in impacts which include rising prices of wood products and increased dependence on imports and competing materials.

Pulpwood production increases in the South and Northeast. Pulpwood production in the South continued upward in 1970, reaching an all-time peak of 42 million cords. Increase in the use of oaks and other hard hardwoods for pulping in the South is a significant departure from past trends. In the Northeast, pulpwood procurement patterns have changed considerably in recent years as old, inefficient mills close or convert to new pulping processes, and high-production mills open. Pulpwood production rose 11 percent over the previous year.

A new computerized system for annual updating of basic forest survey data was developed. Because of the long interval between Statewide resurveys, forest resource information is often neither current nor detailed enough for local need. Utilizing this new system and data on growth and removals, current resources and production statistics for 370 counties in six Southern States were produced. This new updating procedure provides badly needed information for timber management and industrial processing planning before the next scheduled resurvey.

Florida's commercial forest area declined 5 percent. Diversions of forest land to agriculture, urban and other uses reduced Florida's commercial forest land by nearly a million acres between 1959 and 1970. Meanwhile, timber volume increased from 1.1 to 10.9 billion cubic feet mainly because of accumulating growth in pine sawtimber. The trend toward less forest land was also detected in the Delta Region of Arkansas, Southeast Georgia, Northern Michigan, East Tennessee, and Wisconsin.

1/ Includes \$23,000 travel reduction savings proposed for transfer to Forest land management for fighting forest fires.

Maine's commercial forest area increased. In Maine, forest area increased 3 percent between 1959 and 1971. A general trend for the East is also illustrated in Maine by a 23 percent gain in growing stock volume mainly in the major pulpwood species.

Forty-seven million acres of commercial forest land were reinventoried during the past year. Field surveys were conducted in Alabama, Alaska, California, Connecticut, Georgia, Missouri, New Hampshire, New Jersey, Oregon, Rhode Island, and Vermont. Reports appraising the forest resource situation were issued for eight States and portions of States. At this rate the resurvey cycle averages 11 years, somewhat greater than the short cycle desired by many users.

Two-stage 3 P sampling offers an alternative for up-dating surveys. A simulated 3 P sample predicted the total cubic volume for five counties in southern Alabama to within 0.7 percent of that shown by the latest forest survey of the area. Re-measurements by this procedure will supplement standard surveys and provide interim data at much shorter intervals than is possible with the standard survey.

Multifunctional inventory technique is studied. A case study using two Arkansas forest survey regions incorporated an appraisal of other forest resources. This approach overcomes deficiencies in appraisals that deal solely with timber production by developing information on other resources, such as recreation, that affect timber production or are affected by timber production.

FOREST PRODUCTS MARKETING RESEARCH

1972	\$2,033,000
1973	2,030,000 <u>1/</u>
1974	2,030,000

No increase is proposed. In fiscal year 1973 travel savings of \$13,000 are proposed to be used for fighting forest fires. On the basis of planned program level for 1974 there will be an increase of \$13,000.

Forest products marketing research seeks to improve the use of the Nation's timber resources through more effective harvesting, processing, distribution, and consumer use of forest products. Studies of factors influencing use of wood and competing materials in construction, manufacturing, shipping, or other end uses indicate potential demands for timber products, and thus serve to guide forestry programs. Research on ways to reduce costs in timber harvesting and processing helps achieve more efficient use and wider markets for available timber resources. Evaluation of opportunities to expand wood-based industries provides guidelines for local development of forest resources and improvement of the rural economy of the Nation.

Examples of Recent Accomplishments

Secondary manufacturing creates volumes of wood residues. Studies show that wood residues generated in 1970 at secondary manufacturing plants in 11 midwestern States totaled about 241 million cubic feet (roughly 3 million tons). Of this total, 55 percent was sold or used for industrial fuel, 11 percent was given away (mostly for animal bedding or waste), and 34 percent was burned or dumped as waste. Relatively small volumes at many individual plants and frequent lack of nearby markets are the main reasons why more of this material is not now marketed for some economic use. This new information provides the base upon which plans can be made for better use of these wood resources.

Bark could have widespread application as mulch material for erosion control. Research shows that shredded tree bark from sawmill wastes makes an excellent mulch for holding disturbed soil against wind and water erosion. Further studies are underway to determine the economics of using a specially equipped mobile bark mulch blower truck for seeding projects on highway roadsides and for strip mine reclamation. Promising results of trials on different types of terrain and for various mulching applications should lead the way to more intensive use of the great volumes of bark now largely wasted.

Use of plywood increasing in apartment construction while lumber use declines. A study of wood products used in apartment construction for which architectural plans and specifications were completed during 1969 showed the average use of lumber per housing unit was 3,886 board feet. Plywood use averaged 1,879 square feet; hardboard 49 square feet; particleboard 52 square feet; and insulation board 45 square feet. Comparisons with a similar study in 1962 show plywood use is increasing and lumber use is declining. This information is valuable in planning for maximum efficiency in wood utilization from forest management to industrial end points.

Further substantial increase in demand for timber and wood products is indicated. Analysis of economic activity in the major timber product markets showed divergent trends in 1971. Residential construction, the Nation's largest market for lumber and plywood, increased about one-third over the 1970 level. Activity in most other major markets such as nonresidential construction, manufacturing, and shipping was below 1970 levels. Trends in prospective economic activity in major markets indicate that the Nation's demand for wood will continue to increase.

1/ Includes \$13,000 travel reduction savings proposed for transfer to Forest land management for fighting forest fires.

Operations research can help the decision-making process in furniture "rounds" manufacture. Operations research techniques were used to evaluate processing strategies of furniture "rounds," high value products produced from better grade hardwood logs. Results of operations research on alternative choices of log sizes, processing constraints, and product requirements can improve profitability of existing plants and help evaluate investments in new plant facilities.

Forecast of mobile home wood use made. Mobile home production has grown dramatically over the past decade and currently accounts for approximately one-third of all single family dwelling units constructed annually in the United States. The mobile home industry has been characterized by shifting geographical areas of concentration. Shipments of mobile homes to the 48 contiguous States for the period 1966-1969 were analyzed to aid in forecasting patterns of wood-building materials used by this industry. From this research, models were developed and projections made of mobile home shipments to States by year for the 1971-1975 period. The wood industry thus is provided with an important planning tool for helping meet product demand from the mobile home builders.

FOREST ECONOMICS RESEARCH

1972	\$1,409,000
1973	1,407,000
1974	1,407,000
No increase is proposed. In fiscal year 1973 travel savings of \$10,000 are proposed to be used for fighting forest fires. On the basis of planned program level for 1974 there will be an increase of \$10,000.	1/

Research in forest economics develops methods to evaluate alternative land management techniques and programs involving the determination of costs and benefits of managing forest lands for timber and other uses, including water, recreation, range, and wildlife. This research includes:

- (1) Development and testing of analytical techniques to integrate and balance multiple uses of forest lands, to aid in policy planning and program formulation for public and private forests, and to provide full technological assessment of the impacts of land management programs on environmental quality.
- (2) Evaluation of timber management and other policies in respect to alternative cultural treatments, protection, levels of stocking, and harvesting methods to achieve optimum investment in forest activities and to aid in allocating the hundreds of millions of dollars spent for forestry programs throughout the Nation.
- (3) Analysis of forestry program alternatives to aid in identifying effective means of stimulating the millions of owners of private lands to adopt more productive forestry practices.

Examples of Recent Accomplishments

Guides to financial returns for forest type conversion to pine plantations in the South developed. These guides show financial returns for various levels of costs and prices and for immediate and delayed conversion with and without timber stand improvement. Use of these guides indicates that profitable opportunities for forest type conversion to pine plantations exist on millions of acres in the South in every ownership class.

Rates-of-value increase estimated for 10 species common to the oak-hickory type. These rates-of-value increase are useful for appraising individual trees, and for evaluating effects of diameter growth, increase in merchantable height, and improvement in tree quality. Rates-of-value increase combined with basal-area requirements provide a basis for determining desirable timber harvests.

Advances made in the use of computers in forest management-financial evaluation and planning. New computer procedures provide for:

- (1) Ranking investment alternatives for which the rate of return varies with the amount invested.
- (2) Discounting benefit and cost flows over time and interpolating values for intermediate years.
- (3) A more realistic classification of timber resources and analysis of a wider spectrum of forest management practices.

- - - - -
1/ Includes \$10,000 travel reduction savings proposed for transfer to Forest land management for fighting forest fires.

The South is gaining markets for forest products. Due to shifting nonforest industries and populations, increasing timber resource availability, and recent innovations in forest-product processes favoring utilization of smaller trees, forest industry in the South appears to be gaining progressively in its competitive position relative to the same industries in other regions.

Practices of forest owners vary widely. Practices followed by nonindustrial private woodlands owners in supplying forest products and services were determined from a sample of 400 Pennsylvania owners. Owners of large forest acreages sell forest products more frequently than owners of small properties, undertake forest management more often, and are more interested in income-producing potential of their forest tracts.

Data on output-per-man-hour indicate a rise in productivity in forest industries. Productivity in the lumber and wood products sector increased annually by 3.2 percent while actual employment dropped 14 percent in the period 1947-67. The paper industry had an annual productivity rate increase of 3.4 percent.

Costs of practicing forestry in the South increased substantially between 1952 to 1967. Increases of 200 to 700 percent exceeded inflation in the general economy and in prices received for forest products. Forestry practices included were:

- (1) Controlled burning.
- (2) Seedbed preparation by bulldozing or disking.
- (3) Planting by hand or machine.
- (4) Cutting to release young growth.
- (5) Poisoning or girdling undesirable trees.
- (6) Timber cruising.
- (7) Marking trees for harvest.



GEOGRAPHIC BREAKDOWN OF APPROPRIATIONS

State and Private Forestry Cooperation

	1973 <u>estimate</u>	1974 <u>estimate</u>	<u>Change</u>
Alabama	\$717,000	\$714,500	-\$2,500
Alaska	436,000	443,000	+7,000
Arizona	108,000	108,000	--
Arkansas	626,000	626,000	--
California	1,237,000	1,237,000	--
Colorado	311,000	309,000	-2,000
Connecticut	176,000	174,000	-2,000
Delaware	91,000	91,000	--
District of Columbia	1,110,000	1,110,000	--
Florida	856,000	856,000	--
Georgia	919,000	919,000	--
Guam	2,500	2,500	--
Hawaii	85,600	85,600	--
Idaho	433,000	431,000	-2,000
Illinois	212,000	212,000	--
Indiana	168,000	164,000	-4,000
Iowa	122,000	122,000	--
Kansas	289,900	275,400	-14,500
Kentucky	571,000	571,000	--
Louisiana	683,000	683,000	--
Maine	631,000	637,000	+6,000
Maryland	344,000	344,000	--
Massachusetts	272,000	272,000	--
Michigan	702,000	702,000	--
Minnesota	494,000	494,000	--
Mississippi	701,000	701,000	--
Missouri	725,000	735,000	+10,000
Montana	285,000	285,000	--
Nebraska	241,000	241,000	--
Nevada	256,000	252,000	-4,000
New Hampshire	192,000	190,000	-2,000
New Jersey	327,000	327,000	--
New Mexico	162,000	162,000	--
New York	671,000	665,000	-6,000
North Carolina	910,000	910,000	--
North Dakota	94,000	94,000	--
Ohio	383,000	383,000	--
Oklahoma	329,000	329,000	--
Oregon	751,000	761,000	+10,000
Pennsylvania	617,000	617,000	--
Puerto Rico	122,000	122,000	--
Rhode Island	101,000	101,000	--
South Carolina	699,000	699,000	--
South Dakota	149,000	149,000	--
Tennessee	656,000	656,000	--
Texas	521,000	516,000	-5,000
Utah	209,000	209,000	--
Vermont	215,000	215,000	--
Virgin Islands	13,000	16,000	+3,000
Virginia	725,000	725,000	--
Washington	683,000	683,000	--
West Virginia	405,000	405,000	--
Wisconsin	845,000	853,000	+8,000
Wyoming	176,000	176,000	--
Proposed for transfer	9,000,000	--	-9,000,000
Total	32,760,000	23,760,000	-9,000,000



COOPERATION IN FOREST FIRE CONTROL

1972	\$20,000,000
1973	25,000,000 1/
1974	16,000,000
Decrease	-9,000,000

An appropriation decrease of \$9 million is proposed to carry the 1974 program at the same level planned for 1973. Protection of non-Federal land from destruction by fire is primarily a State and local responsibility with the Federal role one of providing support and some incentive to the States in their effort. With the advent of revenue sharing, some reductions can be made in this cost-sharing program without causing undue financial impacts on the States.

The Cooperative Forest Fire Control program, authorized by the Clarke-McNary Act of 1924, provides technical and financial assistance to the States in protecting the non-Federal lands. In the first 5-year period that the program was in operation (1924-1928) an average of 284 million acres were provided some measure of protection. During this period, for each million acres protected, there was an average of 262 fires and 58,800 acres burned. This compares with 514 million acres protected, 196 fires, and 3,320 acres burned per million acres protected during the latest 5-year period (1967-1971). Protection is currently being given to about 574 million acres of non-Federal forest and non-forest watershed lands. Protection costs have increased from about \$1.9 million in 1924 to over \$124 million in 1971. Much of the increase in fire control costs is due to the greater use of complex and expensive equipment, including much more extensive use of aircraft. Another significant item which has increased fire control costs is the reduction in the purchasing power of the dollar. Equipment development for specific firefighting application is being accelerated. Modern fire management tools are essential in order to get the maximum production of goods and services from the non-Federal forests for a growing America.

A well-trained and properly equipped fire organization helps to strengthen rural America by providing adequate fire protection. Investments can be made with some assurance they will not be destroyed by wildfires. These increased investments help to strengthen rural income and provide additional job opportunities for rural people. More jobs will aid in reducing rural poverty, and a reduction in the number and size of wildfires will make rural areas better and safer places in which to live.

Funds will be used to assist States to develop more effective and efficient fire organizations. Added emphasis will be placed on reducing the amount of air and water pollution through a reduction in the number of wildfires, especially the large (over 300 acres) disaster-type fires. These are the fires which are the most costly, as well as destructive. Assistance will be directed to helping States get current cost data through updating the periodic fire protection analysis. This will provide better information for the States to use in fire management planning. Law enforcement will be strengthened, and expanded use of fuels management as a fire prevention tool will be made.

A formula that applies uniformly to all States is used in distributing the funds. The formula recognizes the two factors most directly related to fire control:

- (1) Extent of the fire protection job.
- (2) State and local performance as represented by expenditures.

Each of these factors is given equal weight. The half based on need is termed the "regular allotment" and is determined by a periodic fire protection analysis. A new analysis is to be started in 1973. The half based upon expenditures uses the average of the most current 3-year State and private expenditures and is termed

1/ Includes \$9 million proposed for transfer to Forest land management for fighting forest fires.



the "extra allotment." The total of these two parts becomes the Federal allotment to each State. A sliding scale is used to reduce the total allotment to bring total payments equal to funds available.

The table following this section shows proposed financing in fiscal year 1974, compared with fiscal years 1972 and 1973.

Examples of Recent Accomplishments

Prevention. States continue to expand the use of contactors to reduce man-caused fires in high incidence areas. Alabama plans to contact 10 percent of the people living in rural areas, and Illinois made special contacts with 273 local fire departments. South Carolina has hired a fire prevention specialist to work in 12 high occurrence counties. Washington used hazardous area closures quite effectively, and Michigan employed a new staffman to establish an effective prescribed burning program. Massachusetts passed a law which prohibits open burning, and Oklahoma has codified all of its fire laws. Washington passed legislation which requires spark arresters on motorized equipment that is used off of hard-surfaced roads.

Law enforcement. Significant increases are being made in law enforcement training as a means to reduce the incidence of man-caused fires. South Carolina trained and commissioned 18 more fire control personnel as law enforcement officers. Arkansas, Florida, Nevada, Texas, and West Virginia have all given training courses to personnel in law enforcement or arson investigation procedures. Iowa has strengthened their enforcement in fires caused by railroad operations, and Kentucky employed and trained two new law enforcement officers.

Additional acreage protected. Nearly 54 million more qualifying acres of forest and non-forest watershed lands were placed under fire protection. States which had significant increases were: Alabama, Arkansas, Florida, Mississippi, Missouri, Montana, North Carolina, Oklahoma, Oregon, and South Dakota. Several other States placed a smaller number of acres under fire protection.

Other. One means which has been used to assist States to strengthen their fire management efforts has been use of the Intergovernmental Personnel Act. A Forest Service fire prevention specialist has been detailed to the Alabama State forester's staff and a fire management specialist to the Oklahoma State forester. Also, a New Mexico State employee has been detailed to the Forest Service for intensive fire management training. It is intended to expand the interchange of employees where possible as another means to further fire program objectives of assisting States to develop strong and effective wildfire organizations.



COOPERATIVE FOREST FIRE CONTROL

State and Private Funds Expended FY 1972	Federal Allotments FY 1972	Federal Allotments FY 1973 (estimate)	Federal Allotments FY 1974 1/ (estimate)
Alabama	\$2,090,607	\$573,250	\$468,000
Alaska	342,611	251,864	309,000
Arizona	66,515	65,214	52,300
Arkansas	1,819,260	551,210	426,700
California	28,006,640	1,319,353	1,021,200
Colorado	1,573,930	191,070	208,600
Connecticut	222,917	145,183	115,100
Delaware	64,212	47,000	41,400
Florida	7,242,881	739,386	572,800
Georgia	6,654,727	780,739	604,200
Hawaii	158,593	66,643	52,600
Idaho	844,458	400,767	319,100
Illinois	610,548	138,202	117,100
Indiana	270,085	101,712	78,600
Iowa	99,091	73,284	56,700
Kansas	894,641	229,249	183,000
Kentucky	1,287,434	431,825	348,000
Louisiana	3,360,131	658,248	513,900
Maine	1,814,277	520,537	403,000
Maryland	952,237	276,979	222,400
Massachusetts	620,910	257,187	199,200
Michigan	3,101,352	656,253	507,800
Minnesota	468,096	421,201	325,900
Mississippi	3,142,024	623,896	498,800
Missouri	2,125,740	517,592	418,800
Montana	930,001	219,325	177,400
Nebraska	495,272	189,864	161,500
Nevada	680,389	216,727	177,300
New Hampshire	263,188	138,710	110,100
New Jersey	999,305	284,053	233,600
New Mexico	213,401	91,800	71,100
New York	2,198,435	532,493	431,200
North Carolina	4,056,564	684,826	535,400
North Dakota	20,224	36,600	31,300
Ohio	357,558	235,641	187,500
Oklahoma	762,065	258,998	224,900
Oregon	4,414,009	691,993	538,400
Pennsylvania	2,363,545	506,138	402,300
Rhode Island	233,343	80,301	62,500
South Carolina	2,970,778	616,216	488,500
South Dakota	311,751	90,128	76,300
Tennessee	3,023,084	622,860	488,700
Texas	1,462,210	451,919	349,600
Utah	399,416	155,593	125,700
Vermont	83,849	80,863	62,700
Virginia	2,163,509	575,644	451,100
Washington	4,534,622	694,457	538,500
West Virginia	595,721	256,589	208,000
Wisconsin	3,095,811	619,943	492,000
Wyoming	410,720	121,975	108,500
Administration, inspection, prevention, and special services	--	1,508,500	1,201,700
Proposed for transfer	--	--	9,000,000
Total	104,872,687	20,000,000	25,000,000
			16,000,000

1/ While the amount available to a State may, if the allotment is small, exceed previously computed expenditures by that State, the actual payment to a State never exceeds State and private funds expended by or under the control of the State.



COOPERATION IN FOREST TREE PLANTING

1972	\$325,000
1973	325,000
1974	325,000

No program increase is proposed.

This program provides financial and technical assistance to cooperating States in the production, acquisition, and distribution of tree seed and planting stock for forest and windbarrier plantings on non-Federal lands. Seed and trees thus furnished at modest cost form the backbone of current public forestation efforts which contribute to increased timber production and the enhancement of environmental values, including public recreation, wildlife habitat, and pollution abatement.

Program funds are used to assist the States in meeting the cost of seed extraction, seedling production, nursery maintenance, and other operations.

The procedure for allotment of funds provides for a project approach with funds to be allocated on the basis of projects which will be designed to stimulate more efficient nursery operations. Projects proposed to date range from the production of "tubed" or specially packaged seedlings to pilot testing of methods for more efficient weed control in nurseries.

The number of trees that States shipped to landowners during each of the past four fiscal years follows:

<u>Year</u>	<u>Federal-State Coop. Program</u>
1968	544,420,000 Seedlings
1969	523,986,000 "
1970	494,941,000 "
1971	550,797,000 "

Examples of Recent Accomplishments

Production of improved genetic quality seedlings. Improved genetic quality forest tree seed is becoming available for seedling production at a rapidly increasing rate. For example, during the 1971-72 season, seed orchard seedling stock amounted to over 105 million seedlings, which means that about 150,000 acres will be growing more wood than would be the case if regular seed were used (Figure 28).

REGULAR ALLOTMENTS TO STATES

	<u>FY 1973</u>	<u>FY 1974</u>
Arizona	\$3,000	\$3,000
Colorado	7,000	7,000
Delaware	2,500	2,500
Guam	2,500	2,500
Idaho	12,000	12,000
Kansas ..	12,000	12,000
Montana	12,000	12,000
Nebraska	8,000	8,000
Nevada	12,000	12,000
New Jersey	2,500	2,500
New Mexico	12,000	12,000
North Dakota	12,000	12,000
Oklahoma	9,000	9,000
Rhode Island	2,000	2,000



Project (28)

	<u>FY 1973</u>	<u>FY 1974</u>
South Dakota	12,000	12,000
Utah	12,000	12,000
Wyoming	4,000	4,000

SPECIAL PROJECT ALLOTMENTS TO STATES

	<u>FY 1973</u>	<u>FY 1974</u>
Alabama (Auburn University Project--weed control)	\$26,000	\$26,000
Alabama (seedling harvester)	3,000	- -
Colorado (containerized seedlings)	2,500	- -
Connecticut (irrigation)	1,350	- -
Idaho (seeder)	2,750	- -
Illinois (tree shaker)	1,000	- -
Indiana (drainage)	4,000	- -
Kansas (containerized seedlings)	15,000	- -
Maine (cold storage)	3,770	- -
Nebraska (seed source)	2,000	2,000
Nevada (tree nursery)	4,000	- -
New Hampshire (pond)	2,000	- -
New York (seedling storage)	6,784	- -
Pennsylvania (hardwood planting test)	2,000	2,000
Texas (shelterbelt)	5,000	- -
Wisconsin (root rot control)	1,250	- -



Superior Tree Orchards



Harvesting loblolly pine cones in a superior tree seed orchard. Seed from these cones will provide planting stock for the production of high quality trees that will grow 20% faster than Nature's unculled forest.



Harvested slash pine cones. Cones will be taken to seed extractory for processing. Seed extracted will be planted in spring.

Figure 28



COOPERATION IN FOREST MANAGEMENT AND PROCESSING

1972	\$ 5,003,000	1/
1973	5,000,000	
1974	5,000,000	

No program increase is proposed.

Through State-Federal cooperative programs, technical assistance is provided to private nonindustrial woodland owners, loggers, wood-using industries, communities, and organizations concerned with the protection, management and use of forest resources. On-the-ground assistance is provided by State professional personnel with training and expert backstopping by Federal specialists.

The majority of the productive forest land in the United States, or 296 million acres, is in the hands of small private owners. Most of them lack the technical forestry skills required to manage the lands to provide their share of the Nation's needs for forest products and services. The program provides technical assistance to these landowners through State service foresters to increase the flow of timber and nontimber products and to improve environmental values.

Technical assistance is given to loggers, sawmill, and other plant operators to improve logging, processing and business methods to improve the supply of soft-wood lumber and plywood through the reduction of wood waste and increased utilization of wood residue. This effort will be implemented through a new program direction known as Softwood Timber Extension Project. STEP is directed toward putting more softwood lumber and plywood on the market and will involve the increased use of private consultants.

State forestry personnel and rural communities provide specialized forestry assistance to Rural Development Committees throughout the Nation. State personnel serve State committees, sub-State units, and rural communities, thereby strengthening the overall effectiveness of local rural development efforts.

Technical assistance is provided in cooperation with the State forestry agencies in 50 States, Puerto Rico, and the Virgin Islands. Significant thrusts of the programs are to develop opportunities for private consulting foresters to establish and expand their forestry assistance operations.

Federal appropriated funds are distributed to the States by formula which is applied to each State's need and performance.

- (1) Need is based on the number of small woodland owners in the State and the acres of commercial forest owned expressed as a percentage of the total in the Nation.
- (2) Performance is based on State funds expended in excess of Federal funds. The excess is determined for each State and then expressed as a percentage of the total excess for all States.
- (3) The average of the need and performance percentages for each State represents the State's share of total funds available for distribution.
- (4) The minimum allotment to any participating State is \$30,000.

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1/ Includes \$10,000 personnel savings applied to emergency work associated with fire and flood damages.



Major work accomplishments are shown in the following table:

Major Benefits	: Unit	: FY 1972	: FY 1973 (Planned)
Woodland owners given direct on-the-ground forestry assistance	Number	128,000	130,000
Forest products operators assisted	Number	16,400	16,000
Incidental forestry assistance	Number	131,000	130,000
Area of woodland involved	Acres	9,374,000	9,500,000
Volume harvested under improved practices	MBF	1,480,000	1,500,000
Area of timber stand improvement	Acres	201,000	200,000
Area planted or seeded	Acres	381,000	400,000

Examples of Recent Accomplishments

- (1) The "Camden Fire" burned 892 acres in Spokane County, Washington. This was one of a series of fires that plagued eastern Washington last year.

Of the total area burned, 511 acres were privately-owned by five individuals. Most of this area had been covered by a low density stand of pine and Douglas-fir. Average volume was about 3,000 board feet per acre. Immediately after the fire, the service forester contacted the five landowners involved. He discussed the need for and methods of rehabilitation. They agreed on grass seeding to control erosion, salvage of merchantable material, and finally replanting with trees. In August contracts were made and grass seeding was accomplished.

Some difficulty was experienced in arranging for the salvage of the fire-killed timber. An Idaho buyer was found, and to date, most of the pine has been removed. Utilization is to a 4" top. The price paid was \$16 per cord with an approximate volume of 2,700 cords. About 500,000 feet of fir remains with a value of \$50 per thousand. Tree planting was the next and probably most important phase. The landowners contracted with the local Future Farmers of America Chapter for planting 71,000 seedlings. This job is now being completed.

The service forester was instrumental in bringing the landowners, log buyer, loggers, FFA, grass seedling contractors, and the Extension Service together. Without his initial contacts and continual work, this 511 acres would probably not have been rehabilitated and would become idle land and a large volume of salvageable timber lost.

- (2) Two sawmill clinics were conducted in the villages of Tanana and Ruby, Alaska by State and Forest Service teams. Instruction was given in proper sawing of lumber and processing logs for house construction. The potential benefit to the residents of these communities is great in terms of improved housing for residents of Native villages. The Alaska State Housing Administration in cooperation with the Bureau of Indian Affairs is initiating a program to construct 1,200 homes in Native villages. Locally manufactured lumber will play an important role in this construction effort. The end result will be to increase availability of quality construction lumber and raise the quality of the living structures in these remote areas.
- (3) Forest products utilization personnel in Wisconsin conducted a session in log bucking and grading for a large wood-using firm in that State. Direct results noted by a company official include an increase of log recovery volume by 55 percent and an increase of veneer grade recovery by 100 percent. No. 1 log recovery increased by 46 percent while No. 2 recovery moved up 40 percent. Based on information gained at the training session, the company began paying more for graded logs. The cutters earnings have increased considerably since the new rates became effective and better quality logs are being brought to the mill. This kind of activity increases the supply of softwood lumber from the same volume of logs.



- (4) A forestry research information and feedback system has been developed and implemented in the Northeast to serve the forester who does not have ready access to a library. His questions and suggestions are received, current applicable information is furnished to him. Questions and suggestions whose answers are not available are consolidated and furnished to various forest research performing agencies for consideration in developing their research programs. This system holds promise of reducing the gap between known research results and field application of these results.
- (5) Assistance provided by utilization and marketing foresters employed by the State of Pennsylvania to a wood-based manufacturing firm resulted in a marked decrease in wood waste and the development of a market for wood residue that was heretofore burned creating a high level of air pollution. The assistance saved the firm the cost of disposing of the material which accumulated at the rate of 16 tons per day and facilitated their compliance with anti-pollution regulations. The cost benefit ratio relative to this assist is 1:52, three more local workers were employed and the same amount of wood produces nearly 10 percent more finished products.

Project (29)

The following table shows proposed financing in fiscal year 1974 compared with fiscal years 1972 and 1973:

	<u>FY 1972</u>	<u>FY 1973</u> <u>estimate</u>	<u>FY 1974</u> <u>estimate</u>
Alabama	\$116,400	\$115,200	\$115,200
Alaska	30,000	23,000	30,000
Arizona	30,000	30,000	30,000
Arkansas	98,200	95,600	95,600
California	83,300	81,100	81,100
Colorado	54,700	53,200	53,200
Connecticut	34,200	34,100	34,100
Delaware	30,100	30,000	30,000
Florida	201,900	196,500	196,500
Georgia	221,200	215,200	215,200
Hawaii	30,000	28,000	28,000
Idaho	41,600	40,500	40,500
Illinois	64,000	66,500	66,500
Indiana	60,600	61,500	61,500
Iowa	43,200	42,900	42,900
Kansas	34,600	34,900	34,900
Kentucky	149,300	152,300	152,300
Louisiana	95,200	92,600	92,600
Maine	111,800	108,800	108,800
Maryland	75,700	77,100	77,100
Massachusetts	42,900	42,400	42,400
Michigan	134,400	130,800	130,800
Minnesota	94,700	96,100	96,100
Mississippi	122,900	124,100	124,100
Missouri	142,300	146,300	146,300
Montana	55,900	55,000	55,000
Nebraska	36,300	36,300	36,300
Nevada	30,000	34,000	34,000
New Hampshire	56,000	54,500	54,500
New Jersey	43,200	43,100	43,100
New Mexico	42,500	45,200	45,200
New York	157,100	162,300	162,300
North Carolina	243,500	249,800	249,800
North Dakota	30,000	30,300	30,300
Ohio	103,600	104,900	104,900
Oklahoma	40,000	37,300	37,300
Oregon	67,700	65,900	65,900
Pennsylvania	140,700	143,900	143,900
Puerto Rico	30,000	30,300	30,300
Rhode Island	30,000	30,000	30,000
South Carolina	129,500	126,000	126,000
South Dakota	32,600	32,300	32,300
Tennessee	90,900	91,400	91,400
Texas	83,000	83,300	83,300
Utah	30,700	35,000	35,000
Vermont	85,000	85,600	85,600
Virgin Islands	30,000	13,000	16,000
Virginia	189,700	193,700	193,700
Washington	74,000	72,000	72,000
West Virginia	79,600	80,300	80,300
Wisconsin	194,500	189,300	189,300
Wyoming	34,300	33,400	33,400
Total to States	4,303,500	4,276,800	4,286,800
Forest Service administration	699,500	723,200	713,200
Total appropriation	5,003,000	5,000,000	5,000,000

GENERAL FORESTRY ASSISTANCE

1972	\$2,431,000	1/
1973	2,435,000	
1974	2,435,000	

No change is proposed.

General forestry assistance funds are used to accomplish highly specialized forestry assistance not available through other Forest Service cooperative programs. A major portion of the funds is used to provide professional assistance to State forestry agencies, woodland owners, associations, and the wood industry to enhance rural community development and to achieve more efficient management production and processing of the Nation's timber resources.

General forestry assistance funds are used to provide expert forest resource management and use assistance in such activities as:

- (1) Land use planning.
- (2) Multiple use management.
- (3) Dissemination of forest research findings.
- (4) Forest products utilization.
- (5) Continuous forest inventory.
- (6) Forest hydrology.
- (7) Advisory management services provided to State forestry agencies, including organizational management training.
- (8) Special studies.

Technical assistance is provided directly by the Forest Service or through specific agreements with State foresters, colleges, and/or private contractors.

Examples of special study projects currently being conducted are:

- (1) Rural development and comprehensive land use planning. Special efforts are being made to involve State foresters in comprehensive land use planning and rural development. These efforts are directed toward improving the use of forest resource in all aspects of State and local planning and development. Forest planning and development provides a multitude of benefits to rural communities, such as:
 - (a) Employment for local workers.
 - (b) Recreation for resident and non-resident visitors.
 - (c) Adequate supplies of quality water.
 - (d) Raw materials such as timber and specialty products that will increase income and jobs.
- (2) Mountain land use planning. Professional foresters are providing planning assistance to local county officials in Summit, Grand and Eagle Counties, Colorado. This special project will enable the Forest Service, State foresters and the counties to determine the best use of mountain land within the critical limits of soil, fire, flood protection and impact caused by population explosion.

1/ Includes \$21,000 personnel savings applied to emergency work associated with fire and flood damages.



(3) Forest products utilization. State and Forest Service personnel, working closely with private consultants and university staff members are extending the Nation's supply of forest resources by determining new and better uses for logging and milling residues and low quality trees. A project in Michigan is directed at increasing the yield of quality grade lumber from small low grade hardwood trees currently being used for wood pallets. The processing and merchandising of sawdust, bark, and even twigs and needles, has expanded dramatically since foresters began analyzing the benefits of using these materials for soil amendments and as a mulch. State and Forest Service personnel were largely responsible for the formation of a National Bark Producers Association.

(4) Minority forest landowners. Application of operational governmental programs to further the potential of minority landowners to manage their forest land is the major emphasis of a project in South Georgia, Southeast Alabama, and North Florida.

Additional projects currently in operation provide special assistance in forest land inventory and multipurpose management techniques--all designed to improve the Nation's forest land.

Examples of Recent Accomplishments

- (1) A forest survey indicated an opportunity for sustained harvesting and processing of cottonwood stands in Nebraska. Armed with this basic resource data and information on economic and employment trends, forest products utilization personnel promoted the establishment of a sawmill in the area to process the raw material that was presently being wasted. A market survey was conducted and the results were widely publicized. Today a modern processing plant is in operation, employing local workers and providing indirect employment to several more loggers and support service workers.
- (2) As a result of an analysis, which was followed with technical assistance by a team of State and Forest Service personnel, a faltering wood-based manufacturing plant in Indiana was able to continue operations and maintain employment of 20 full-time jobs. The team's recommendations included ways to improve production and decrease wood waste without eliminating jobs or purchasing additional equipment.
- (3) A large corporation in Maine was having problems obtaining sufficient quantities of West Coast softwood lumber for their use in constructing modular homes. Lumber prices were also escalating which reduced the firm's competitive position. Forest products utilization specialists suggested to the firm's management personnel that they consider using local softwood species, mainly spruce, in their operation. After a thorough analysis was made with the assistance of the specialists, the firm began using Eastern spruce for modular home framing. The firm is now using 5 million board feet of this locally produced lumber per year. This new market valued at \$1,000,000 increases the use of a species currently in excess supply and provides additional jobs for six woodworkers and 25 sawmill workers. It extends the Nation's supply of softwoods lumber by substituting an underused species for species that are already in great demand throughout the Nation.
- (4) The Forest Service and State foresters are involved in rural development to insure that proper consideration is given to forest resources in rural areas. In Virginia, forestry officials on the rural development committees worked with the Lions Club to construct a special trail for the visually handicapped and the public.



- (5) The small size and large numbers of woodland ownerships contribute to the problem of furnishing technical assistance and accomplishing forest protection and improvement work on these ownerships. Financial and technical assistance was given to the New Hampshire State forester for the organization of a non-profit Timberland Owners Association. From the 40,000 woodland owners in the State, early results show that 343 members have joined the Association. This membership represents 774,972 acres of private woodlands. Considerable success is already evident from the joint efforts of members in planning and carrying out projects in forest management, fire protection and suppression, and insect and disease control work.
- (6) Assistance was given in the improvement and application of sampling with probability proportioned to prediction (known as 3P sampling). This system coupled with the STX computer program makes possible rapid reinventories of large forest areas and results in a 66 percent cost reduction. It can provide critical forest product data estimates which are not available under the continuous forest inventory remeasurement system. Short courses on the application of this new inventory technique have been developed and are offered by colleges and universities periodically.





As a result of assistance provided by Forest Products Utilization specialists, wood residue such as these slabs are now used for making paper and particleboard instead of being burned.



State and Forest Service specialists give technical assistance in proper drying of lumber to wood producers and processors to reduce wood waste and improve the quality of a wide array of consumer products.

Figure 30





COOPERATIVE RANGE IMPROVEMENTS

Appropriation, 1972	\$700,000
Appropriation, 1973	700,000
Budget estimate, 1974	<u>700,000</u>

Part of the grazing fees from the National Forests, when appropriated, are used for revegetation of depleted rangelands, construction and maintenance of range improvements, rodent control, and eradication of poisonous plants and noxious weeds. These funds are advanced to and merged with the appropriation, Forest protection and utilization, subappropriation, Forest land management.

Section 12 of the Act of April 25, 1950, (Granger-Thye Act) provides that of the money received from grazing fees by the Treasury from each National Forest during each fiscal year there shall be available at the end thereof when appropriated by Congress an amount equivalent to 2 cents per animal month for sheep and goats and 10 cents per animal month for other kinds of livestock under permit on such National Forest during the calendar year in which the fiscal year begins.

Since figures for animal months permitted are not available until after more than one-half of the fiscal year for which funds are appropriated has elapsed, the 1974 appropriation request of \$700,000 necessarily represents the best current approximation of the amount which will become available in the calendar year 1973 under the animal-months-permitted formula.

For calendar year 1971, the latest available figures, animal months permitted were 6,512,000 for cattle and horses, and 4,728,000 for sheep and goats. This calculates to \$745,760 available under the formula.



FOREST ROADS
AND TRAILS

LAND READING



CONSTRUCTION AND LAND ACQUISITION

Appropriation Act, 1973	\$48,581,900
Budget estimate, 1974	25,498,000
Decrease	<u>-23,083,900</u>

SUMMARY OF INCREASES AND DECREASES
(On basis of appropriation)

	1973 Appropriation	1974 Estimate	Increase or decrease
<u>Forest land management construction:</u>			
<u>Development of recreation-public use areas</u> --It is proposed that \$1,452,900 of 1973 unobligated funds be applied to the development of camping, picnicking, and other recreation facilities	\$7,170,400		<u>-\$7,170,400</u>
<u>Water resource development construction</u> --It is proposed that \$1,725,000 of 1973 unobligated funds in addition to the 1974 budget estimate (total Program level of \$1,772,000) be made available for the construction of recreation facilities at water development projects of other agencies	3,182,000	\$47,000	<u>-3,135,000</u>
<u>Construction for fire, administration, and other purposes</u> --It is proposed that \$1,138,000 of 1973 unobligated funds in addition to the 1974 budget estimate (total program level \$2,241,000) be made available to provide communications systems and water and sanitary systems essential to proper National Forest protection and administration	2,316,500	1,103,000	<u>-1,213,500</u>
<u>Research construction</u> --Decrease is due to non-recurring construction projects. It is proposed that \$134,000 of 1973 unobligated funds be made available for two small research facilities	5,143,000	--	<u>-5,143,000</u>
<u>Pollution abatement</u> --It is proposed that \$8,152,000 of 1973 unobligated funds in addition to the 1974 budget estimate (total program level of \$31,300,000) be made available to continue the alleviation of existing pollution problems at recreation, research, and administrative facilities	29,470,000	23,148,000	<u>-6,322,000</u>
<u>Land acquisition, Weeks Act</u> --An amount of \$1,200,000 is proposed for the acquisition of key inholdings within the National Forests and the National Forest purchase units	1,300,000	1,200,000	<u>-100,000</u>
Total	48,581,900	25,498,000	<u>-23,083,900</u>

PROJECT STATEMENT
(On basis of appropriation)

Project	1972	1973	1974	Increase or decrease
	estimate	estimate	estimate	
(1) Forest land management construction:				
(a) Development of recreation-public use areas	\$4,509,200	\$7,170,400		-\$7,170,400
(b) Water resource development construction	1,885,000	3,182,000	\$47,000	-3,135,000
(c) Construction for fire, administration, and other purposes	2,431,000	2,316,500	1,103,000	-1,213,500
(2) Research construction	5,037,000	5,143,000		-5,143,000
(3) Pollution abatement	20,541,000	29,470,000	23,148,000	-6,322,000
(4) Land Acquisition, Weeks Act	1,300,000	1,300,000	1,200,000	-100,000
Total appropriation	35,703,200	48,581,900	25,498,000	-23,083,900

PROJECT STATEMENT
(On basis of available funds)

Project	1972	1973	1974	Increase or decrease
	estimate	estimate	estimate	
(1) Forest land management construction:				
(a) Development of recreation-public use areas	\$3,853,320	\$3,147,784	\$1,452,900	-\$1,694,884
(b) Water resource development construction	2,240,043	1,932,000	1,772,000	-160,000
(c) Construction for fire, administration, and other purposes	2,326,189	1,679,000	2,241,000	+562,000
(2) Research construction	3,558,420	1,668,923	134,000	-1,534,923
(3) Pollution abatement	17,719,582	33,275,337	31,300,000	-1,975,337
(4) Land Acquisition, Weeks Act	1,224,382	1,542,016	1,200,000	-342,016
Total obligations or estimate	30,921,936	43,245,060	38,099,900	-5,145,160
Unobligated balance brought forward	-2,483,796	-7,265,060	-12,601,900	-5,336,840
Unobligated balance carried forward	7,265,060	12,601,900		-12,601,900
Total appropriation or estimate	35,703,200	48,581,900	25,498,000	-23,083,900



CONSTRUCTION AND LAND ACQUISITION

Appropriation Act, 1972	\$35,703,200
Appropriation Act, 1973	48,581,900
Budget estimate, 1974	25,498,000
Decrease	-23,083,900

A decrease of \$23,083,900 is proposed.

The program provides for the construction and improvement of buildings, utilities, other physical facilities, and land acquisition throughout the National Forests and National Grasslands estimated to cost more than \$25,000. The financing for the numerous relatively minor construction projects is provided by the operating and research programs of which such minor construction items are an integral part.

(1a) Development of recreation-public use areas (No new budget authority is requested, a decrease of \$7,170,400. On the basis of program level there will be a decrease of \$1,694,884 from the 1973 level of \$3,147,784.)

It is proposed that \$1,452,900 of fiscal year 1973 funds that are not planned for use in 1973 be used in fiscal year 1974 for high priority items.

The proposed program level will provide for essential quality improvement measures, new construction in 3 areas, completion of construction started in previous years at 3 sites, reconstruction at 8 sites, and development of minor visitor information facilities.

Projected recreation use in 1974 will reach 198.2 million visitor-days, an increase of 17 percent over 1970. The following table illustrates this increase in use and the capacity of National Forest campgrounds and picnic grounds.

Comparison of Capacity and Use Increases at
Campgrounds and Picnic Grounds

	Fiscal Year				
	1970	1971	1972	1973*	1974*
<u>Campgrounds</u>					
Capacity (thousands of people-at-one-time)	411.0	420.0	423.0	426.7	428.5
Increase in capacity over previous year (percent)	2.4	2.2	0.7	0.9	0.4
Measured and projected increase in use over previous year (percent)	9.1	6.0	3.0	3.0	2.0
<u>Picnic Grounds</u>					
Capacity (thousands of people-at-one-time)	113.6	115.6	116.6	118.2	118.2
Increase in capacity over previous year (percent)	0.4	1.8	0.9	1.4	- -
Measured and projected increase in use over previous year (percent)	8.0	6.0	3.0	3.0	2.0

* Projected

The program includes:

Quality improvement which consists of replacing or upgrading worn-out, vandalized, or inadequate facilities, including water and sanitation systems, tables, stoves, traffic control structures, bathhouses, and refuse handling facilities. Increases in capacity do not normally result from this kind of work. Benefits are derived from extending the service life of facilities, maintaining and improving the opportunity for a recreation experience, and preventing unnecessary site deterioration and degradation of the surrounding environment through pollution.

New construction will begin at 3 sites, eventually resulting in an increased capacity of 460 people-at-one-time. Construction started in previous fiscal years will continue at another 3 sites resulting in an increased capacity for 890 people-at-one-time. The increased capacity will relieve some overcrowding and use at existing sites and provide facilities to accommodate increased use. It will alleviate sanitation and cleanup problems and soil and vegetation deterioration in some general forest areas.

Emphasis is being placed on completion of projects started in previous fiscal years and on rehabilitation of worn-out facilities at heavily used recreation sites. A list of proposed projects is included in Exhibit I.

Minor Visitor Information Service facilities will be developed to meet visitor needs for orientation and environmental education dealing with natural resource management of the National Forests. There will be minor construction of visitor center exhibits, interpretive trails, amphitheaters, wayside exhibits and scenic overlook interpretive signs. Emphasis will continue to be placed on the development of low cost, high quality facilities and services. A list of proposed facilities is included in Exhibit II.

(1b) Water resource development construction (\$47,000, an appropriation decrease of \$3,135,000. On the basis of program level there will be a decrease of \$160,000 from the fiscal year 1973 level of \$1,932,000.)

In addition to the \$47,000 requested in this budget, it is proposed that \$1,725,000 of funds not planned for use in 1973 be used for obligation for high priority items in 1974; thus making a total program level of \$1,772,000.

This program level will allow construction of non-deferrable projects (facilities that should be constructed prior to impoundment of water) at 9 reservoirs constructed by other agencies and essential minimum facilities at 7 other reservoirs. A list of proposed fiscal year 1974 projects follows:

<u>State</u>	<u>Forest</u>	<u>Project</u>	<u>Estimated Cost</u>
Montana	Kootenai	Libby Reservoir (water and sanitation system for camp-swim site)	\$250,000
Colorado	Pike	Rampart Reservoir (camp and completion of boat ramp and picnic ground)	86,000
Wyoming	Ashley	Flaming Gorge NRA - Firehole (water and sanitation system at camp-swim site)	49,500
California	Tahoe	Stampede Reservoir (Tomson camp-ground)	54,000
Washington	Olympic	Wynoochee Reservoir (Coho campground)	38,000
Arkansas	Ouachita	Poteau River Reservoir - Lake Hinkel (day use site and water and sewer system)	54,000
Georgia	Chattahoochee-Oconee	Lauren Shoals Reservoir (boat ramp)	62,000
Kentucky	Daniel Boone	Laurel Reservoir (boat ramps)	268,000
		Cave Run Reservoir (water and sewer system; picnic-swim sites)	343,500
Texas	National Forests of Texas	Lake Conroe (boat ramp and beach)	44,000
		Toledo Bend (campground)	350,000
Illinois	Shawnee	Cedar Lake (boat ramp and beach)	50,000
		Dutchman Lake (boat ramp completion)	5,000
Indiana	Wayne-Hoosier	Willow Island-Leith Run (boat ramp)	32,000
		Middle Fork Anderson River (camp and picnic ground)	39,000
Pennsylvania	Allegheny	Allegheny Reservoir (campground)	47,000
Total			1,772,000

The Forest Service is responsible for designing and developing public use facilities on National Forest System lands at, and adjacent to, project reservoirs built by other agencies. Impact survey findings and recommendations provide for the protection of water quality and fulfillment of other project purposes by pointing the way to carefully designed public use development tailored to individual project needs. Facilities include sanitation improvements, camping and picnic sites, swimming beaches, boat ramps, and other public use and information facilities. To serve their intended purpose, these facilities should be installed in time to meet the initial impact of visitor use when a reservoir fills. Installation during the construction period is generally less expensive than after completion of the project.

Examples of Recent Accomplishments

In National Forest developed sites, there was an increase in persons-at-one-time capacity of 8,193 in fiscal year 1972. Capacity of sites developed under concession and recreation use permits also increased during fiscal year 1972 by 19,874 persons-at-one-time.

One of the more spectacular construction projects in fiscal year 1973 includes Blanchard Springs Caverns in the Ozark-St. Francis National Forests in Arkansas. Facilities are being developed so the caverns can be opened for safe use by the public in the spring of 1973.

Other projects include continuing construction previously started at 15 public use sites resulting in increased capacity of over 2,000 persons-at-one-time; construction at 10 reservoirs resulting in additional capacity for more than 2,500 persons-at-one-time; reconstruction of worn-out facilities at 21 sites--mostly water and sewer systems; and new construction at 11 sites was commenced which will eventually result in additional increased capacity for over 1,800 persons-at-one-time.

- (1c) Construction for fire, administration, and other purposes (\$1,103,000, an appropriation decrease of \$1,213,500. On the basis of program level there will be an increase of \$562,000 from the fiscal year 1973 level of \$1,679,000.) It is proposed that in addition to the \$1,103,000 requested in this budget, the amount of \$1,138,000 not planned for use in 1973 in this appropriation be used for obligation in 1974 for high priority items. Total program level proposed for 1974 is \$2,241,000, an increase in program level of \$562,000.

Construction funds are planned for use as follows:

Water and sanitation systems--to replace worn out, improve existing or construct new systems that will comply with Federal and State water quality standards:

Specific project locations are as follows:

<u>State</u>	<u>Location</u>	<u>Amount</u>
Arizona	Sitgreaves National Forest	\$104,000
California	Statewide (several projects)	283,000
Colorado	4 projects	49,400
Idaho	4 projects	59,400
Montana	Kootenai National Forest	49,000
	Custer National Forest	51,000
Oregon	Wallowa-Whitman National Forest	34,700
	Fremont National Forest	35,700
	Umpqua National Forest	101,000
Washington	Siuslaw and Willamette National Forests	29,600
West Virginia	Snoqualmie National Forest	47,900
	Bartow Administrative Site	60,000
Miscellaneous projects		<u>125,700</u>
	Total	1,030,400

Communications systems (radios and telephones) -- systems will be improved through installation of new equipment.

Specific project locations are as follows:

<u>State</u>	<u>Location</u>	<u>Amount</u>
Alaska	Statewide	\$194,000
Arizona-New Mexico	Apache National Forest	24,500
California	Statewide fire service net	102,000
	Los Padres National Forest	29,300
	Klamath National Forest	28,000
	Stanislaus National Forest	26,500
Colorado	Gunnison National Forest	83,300
Idaho	Sawtooth National Forest (begin conversion to HiBand)	150,200
Montana	Lolo National Forest (convert to HiBand)	201,700
New Hampshire	White Mountain National Forest	102,100
Oregon	Siuslaw National Forest	95,400
	Winema National Forest	77,000
Miscellaneous projects in Southern States		96,600
	Total	1,210,600

Examples of Recent Accomplishments

The following units were constructed or construction contracts awarded in fiscal year 1972:

<u>Units</u>	<u>No.</u>
Dwellings and barracks	5
Experimental, low-cost housing units	12
Fire lookouts	1
Offices	1
Denver Fire Center - utilities system	1
Service and storage building	1
Purchase administrative site	1
Water and sanitation systems	7

Approximately \$910,000 was used to replace, upgrade or install new communications systems and to reconstruct or improve the quality of existing structural facilities.

(2) Research construction (No funds are requested, an appropriation decrease of \$5,143,000. On the basis of planned program level there will be a decrease of \$1,534,923 from the 1973 level of \$1,668,923.

In fiscal year 1973 \$5,143,000 was appropriated. These funds are not planned for use in fiscal year 1973. It is proposed that \$5,009,000 be used in 1974 for the pollution abatement program and that \$134,000 be used to construct or improve water and sanitation systems at the following research locations to meet present safe water and pollution standards:

<u>Location</u>	<u>Item</u>	<u>Cost</u>
San Joaquin Experimental Range, O'Neals, California	Water system	\$54,000
Sierra Ancha Experimental Forest, Tonto National Forest, Arizona	Sanitary and sewer systems	80,000

(3) Pollution abatement (\$23,148,000, an appropriation decrease of \$6,322,000)

It is proposed that in addition to the budget authority of \$23,148,000 requested in this budget, the amount of \$8,152,000 not planned for use in 1973 for other activities in this account be used for pollution abatement in 1974. Total program level proposed for 1974 is \$31,300,000, a decrease of \$1,975,337 in program level.

The funds will be used to comply with Executive Order 11507, which directs that abatement of water and air pollution at existing Federal facilities be completed or underway by December 31, 1972, and the Federal Water Pollution Control Act Amendments of 1972 (PL 92-500).

These programs are vitally needed to protect and maintain the resources and environment of the National Forests. They will:

- (a) Help prevent a general degradation of the National Forests.
- (b) Insure a continued flow of high quality water for domestic and irrigation use.
- (c) Eliminate uncontrolled dumping and burning of solid waste from Federal facilities on National Forest lands.

Water pollution abatement (\$20,608,000, a program level decrease of \$6,214,663)

The decrease is due to the systematic funding and/or completion of those projects which have been identified as being required for compliance with EO 11507.

These funds will provide for the construction of 79 water pollution abatement projects and the design of four others whose construction has been deferred until fiscal year 1975 in order to cooperate with local communities. An estimated \$7.5 million will be required in fiscal year 1975 to complete the work under the deadlines of EO 11507. In addition, \$5,067,000 will be used to bring all facilities into compliance with PL 92-500 and related State and Federal standards. Where corrective action is found to be necessary, these funds will be used for analysis and preliminary design.

The following is a summary of the proposed program for fiscal year 1974. Construction projects are identified by name with those costing less than \$25,000 being listed under the heading of "Other."

<u>Region</u>	<u>State</u>	<u>Project Name</u>	<u>Project No.</u>	<u>Estimated Cost</u>
Northern	Idaho	Luby Bay	1700	\$81,000
	Montana and Idaho	2 Design projects	- -	39,000
	Montana and Idaho	PL 92-500	- -	848,000
		Subtotal		<u>968,000</u>
Rocky Mountain	Colorado	Dillon	11	60,000
	Colorado	Grand Mesa	33	200,000
	Colorado, Wyoming, & North Dakota	PL 92-500	- -	513,000
		Subtotal		<u>773,000</u>
South-western	New Mexico	Battle Ship Rock	605	193,000
	Arizona	Alpine Work Center	1754	248,000
	Arizona	Central Disposal	738	105,000
	Arizona and New Mexico	PL 92-500	- -	513,000
		Subtotal		<u>1,059,000</u>



<u>Region</u>	<u>State</u>	<u>Project Name</u>	<u>Project No.</u>	<u>Estimated Cost</u>
Inter-mountain	Idaho	Redfish Lake	5	\$1,200,000
	Idaho	Flat Rock	122	250,000
	Wyoming	Fremont Lake	276	71,000
	Nevada	Lehman Creek	139	370,000
	Utah	Lodgepole	232	243,000
	Utah	Provo River	191	364,000
	Utah	Duck Creek	240	443,000
	Utah	Blackhawk	1170	71,000
	Utah	Westside	805	53,000
	Idaho	Big Smoky	1183	120,000
	Utah	Moon Lake	1194	29,000
	Utah, Idaho, and Nevada	PL 92-500	--	<u>580,000</u>
		Subtotal		<u>3,794,000</u>
California	California	June Lake Loop	50	62,000
	California	Mammoth Lake Basin	1621	60,000
	California	Mammoth Community	1618	40,000
	California	Oak Knoll Ranger Station	748	49,000
	California	Eagle Lake	156	875,000
	California	Corral Creek	1076	215,000
	California	Bishop Creek	1622	1,540,000
	California	Ukonom Ranger Station	184	89,000
	California	Clair Engle	832	172,000
	California	Lake Alpine Silver	432	541,000
	California	Rock Creek	1617	60,000
	California	Convict Lake	1616	30,000
	California	Medicine Lake	695	65,000
	California	Clark Fork	241	166,000
	California	Tioga Junction	1615	259,000
	California	Whitney Portal	1614	367,000
	California	Agnew Meadows	1098	129,000
	California	Aikens Central Disposal	683	109,000
	California	Dogwood	1136	175,000
	California	Reds Meadow	1116	340,000
	California	Big Bend	701	52,000
	California	Lake Hemet	992	42,000
	California	Grout Bay	1612	69,000
	California	Dinkey Creek	815	50,000
	California	Gray's Meadow	1620	190,000
	California	Applewhite	867	81,000
	California	Onion Valley	18	55,000
	California	Pumice Flat	1623	507,000
	California	Green Valley	1195	159,000
	California	3 Other	--	51,000
	California	2 Designs	--	331,000
	California	PL 92-500	--	<u>1,038,000</u>
		Subtotal		<u>7,968,000</u>
Pacific Northwest	Washington	South Shore Lake Quinault	229	60,000
	Washington	Lake Wenatchee	157	30,000
	Washington	Naches Ranger Station	546	35,000
	Washington	Tieton Ranger Station	1090	25,000
	Oregon	Bly Ranger Station	103	165,000
	Oregon	Mt. Hood Disposal #1	93	198,000
	Washington	La Wis Wis	272	513,000
	Oregon	North Umpqua	575	151,000
	Oregon	Deschutes	362	350,000
	Washington	Salmon La Sac	593	907,000
	Washington	Mt. Baker Disposal #2	505	62,000
	Washington	Mt. Baker Disposal #4	514	62,000

<u>Region</u>	<u>State</u>	<u>Project Name</u>	<u>Project No.</u>	<u>Estimated Cost</u>
Pacific Northwest (Cont'd.)	Washington	Mt. Baker Disposal #1	708	\$62,000
	Washington	Tumwater	761	460,000
	Washington	Nason Creek	731	266,000
	Oregon	3 Other	--	24,000
	Washington and Oregon	PL 92-500	--	449,000
		Subtotal		<u>3,819,000</u>
Southern	Louisiana	Valentine Lake	186	447,000
	North Carolina	Lake Powhatan	736	69,000
	North Carolina	Jack Rabbit	336	53,000
	North Carolina	Neuse River	434	86,000
	Arkansas	Lake Wedington	483	131,000
	North Carolina	North Mills River	498	86,000
	Arkansas	Cedar Lake	282	140,000
	Texas	Lake Fannin	204	47,000
	Mississippi, Florida, and Georgia	4 Other	--	42,000
	Regionwide	PL 92-500	--	<u>467,000</u>
		Subtotal		<u>1,568,000</u>
Eastern	Regionwide	PL 92-500	--	<u>458,000</u>
		Subtotal		<u>458,000</u>
Alaska	Alaska	PL 92-500	--	<u>201,000</u>
		Subtotal		<u>201,000</u>
		Total		20,608,000

Air pollution abatement (\$10,692,000, a program level increase of \$8,190,000)

The increase will be used to bring 120 solid waste systems into full compliance with Federal and State standards for solid waste disposal and fully meet the requirements for air pollution under Executive Order 11507.

This program permits Forest Service coordination of solid waste disposal problems with local authorities, special use permittees, private citizens, States, and other Federal agencies. It will eliminate duplication of efforts in developing sanitary landfill sites, equipment manpower, and collection routes. It also will provide for the closing of over 5,000 open dumps, a reduction in the total number of sanitary landfills required, and in general, better land management.

The following is a project listing of the proposed program for fiscal year 1974. Projects under \$25,000 are listed as "Other."

<u>Region</u>	<u>State</u>	<u>Project Name</u>	<u>Project No.</u>	<u>Estimated Cost</u>
Northern	Washington	Colville	101070	\$28,100
	Montana	Custer	101080	27,500
	Montana	Gallatin	101110	96,500
	Idaho	Kaniksu	101130	43,000
	Montana	Lolo	101160	89,300
	Idaho	St. Joe	101180	29,000
	Montana and Idaho	9 Other	--	86,000
		Subtotal		<u>399,400</u>



<u>Region</u>	<u>State</u>	<u>Project Name</u>	<u>Project No.</u>	<u>Estimated Cost</u>
Rocky Mountain	Wyoming	Bighorn	102020	\$65,000
	South Dakota	Black Hills	102030	234,000
	Colorado	Grand Mesa	102040	132,000
	Colorado	Gunnison	102050	134,000
	Wyoming	Medicine Bow	102060	35,000
	Nebraska	Nebraska	102070	81,000
	Colorado	Pike	102080	98,000
	Colorado	Rio Grande	102090	64,500
	Colorado	Roosevelt	102100	64,000
	Colorado	San Juan	102130	36,000
	Wyoming	Shoshone	102140	54,000
	Colorado	White River	102150	41,000
	Subtotal			<u>1,038,500</u>
South-western	Arizona	Apache	103010	143,000
	New Mexico	Carson	103020	372,000
	New Mexico	Cibola	103030	192,600
	Arizona	Coconino	103040	115,000
	Arizona	Coronado	103050	262,000
	New Mexico	Gila	103061	143,200
	Arizona	Kaibab	103070	155,500
	Arizona	Prescott	103090	219,500
	New Mexico	Santa Fe	103100	225,000
	Arizona	Sitgreaves	103110	144,800
	Arizona	Tonto	103120	344,100
	Subtotal			<u>2,316,700</u>
Inter-mountain	Utah	Ashley	104011	193,700
	Idaho	Boise	104020	36,800
	Wyoming	Bridger	104030	50,000
	Utah	Cache	104040	33,600
	Idaho	Caribou	104050	80,500
	Utah	Dixie	104070	54,000
	Utah	Fishlake	104080	152,000
	Nevada	Humboldt	104090	268,400
	Utah	Manti-LaSal	104100	186,400
	Idaho	Payette	104120	30,200
	Idaho	Salmon	104130	66,200
	Idaho	Targhee	104150	251,900
	Nevada	Toiyabe	104170	76,800
	Utah, Idaho, and Wyoming		5 Other	41,200
	Subtotal			<u>1,521,700</u>
California	California	Inyo	105040	31,800
	California	Lassen	105060	37,500
	California	Los Padres	105070	367,400
	California	Modoc	105090	82,400
	California	Six Rivers	105100	87,500
	California	Plumas	105111	66,500
	California	San Bernardino	105120	49,600
	California	Sequoia	105130	157,000
	California	Shasta-Trinity	105140	133,300
	California	Sierra	105151	95,700
	California	Stanislaus	105160	254,800
	California	5 Other	—	48,400
	Subtotal			<u>1,411,900</u>

<u>Region</u>	<u>State</u>	<u>Project Name</u>	<u>Project No.</u>	<u>Estimated Cost</u>
Pacific Northwest	Oregon	Deschutes	106011	\$157,000
	Oregon	Fremont	106020	48,000
	Oregon	Malheur	106040	32,700
	Washington	Mt. Baker	106050	29,500
	Oregon	Mt. Hood	106060	154,600
	Oregon	Ochoco	106070	58,400
	Washington	Okanogan	106080	130,700
	Washington	Olympic	106090	33,500
	Oregon	Siskiyou	106110	98,200
	Oregon	Siuslaw	106120	41,000
	Oregon	Umatilla	106140	140,900
	Oregon	Umpqua	106150	47,800
	Oregon	Wallowa-Whitman	106160	26,000
	Washington	Wenatchee	106170	90,000
	Oregon	Willamette	106180	86,300
	Oregon	Winema	106200	39,200
	Washington and Oregon		3 Other	43,000
	Subtotal			<u>1,256,800</u>
Southern	Alabama	Alabama	108010	32,800
	Georgia	Chattahoochee-Oconee	108030	64,300
	Tennessee	Cherokee	108040	118,300
	Florida	Florida	108050	222,700
	Louisiana	Kisatchie	108060	123,000
	Virginia	George Washington	108080	124,000
	Arkansas	Ouachita	108090	201,200
	Arkansas	Ozark-St. Francis	108100	139,700
	North Carolina	North Carolina	108111	98,500
	South Carolina	Francis Marion-Sumter	108120	80,400
	Texas	Texas	108131	99,800
	Virginia	Jefferson	108140	165,600
	Subtotal			<u>1,470,300</u>
Eastern	Wisconsin	Chequamegon	109020	49,700
	Minnesota	Chippewa	109030	62,200
	Missouri	Clark	109050	120,800
	Wisconsin	Nicolet	109060	106,400
	Michigan	Ottawa	109070	108,500
	Illinois	Shawnee	109080	90,900
	Minnesota	Superior	109090	54,100
	Michigan	Hiawatha	109100	100,100
	Indiana and Ohio	Wayne-Hoosier	109110	52,500
	Missouri	Mark Twain	109180	68,300
	Pennsylvania	Allegheny	109190	44,900
	Vermont	Green Mountain	109200	13,400
	West Virginia	Monongahela	109210	126,200
	New Hampshire	White Mountain	109220	196,100
	Subtotal			<u>1,194,100</u>
Alaska	Alaska	North Tongass	110030	42,000
	Alaska	Chugach	110041	14,000
	Alaska	South Tongass	110050	26,600
	Subtotal			<u>82,600</u>
	Total			<u>10,692,000</u>

Examples of Recent Accomplishments

In fiscal year 1973, the analysis and design of 122 solid waste systems and 81 water pollution abatement systems will have been completed. This leaves only four water pollution abatement projects requiring design under Executive Order 11507 and these designs are being deferred to fiscal year 1974 in order to cooperate with local communities.

Seventeen solid waste systems will have been fully implemented in fiscal year 1973 and will serve to finalize a systematic approach for the analysis and design of solid waste systems in rural areas. This system is tentatively scheduled for release to the public by July 1973.

The fiscal year 1973 program level of \$33,275,337, for pollution abatement will enable the Forest Service to meet the design requirements of EO 11507 and to undertake corrective action on approximately 78 major sources of water pollution.

(4) Land acquisition, Weeks Act (\$1,200,000, an appropriation decrease of \$100,000)

The \$1.2 million included in the fiscal year 1974 estimate will be used to acquire an estimated 8,100 acres in the Redbird Purchase Unit in eastern Kentucky at a cost of \$524,500. The remaining \$675,000 will be used to continue the acquisition programs in purchase units in the eastern United States, plus a minor program in Nebraska. These funds are considered adequate to acquire properties of high priority that are expected to be available in fiscal year 1974. Emphasis is given in this part of the program to the National Forests in Arkansas, Illinois, Michigan, Missouri, and Ohio.

The acquisition of key inholdings within the National Forests and the National Forest purchase units become increasingly urgent as the demands upon wild-lands and farm lands for highway construction, industrialization, and summer home development increase. The development program for the National Forests recognizes the need to acquire additional private inholdings in need of land rehabilitation. Included are lands depleted by repeated fires, poor logging practices, clearing and cultivation of steep and erodible mountain lands, disturbed mineral exploitation areas, and submarginal or marginal farms that should be removed from farming operations and managed for timber production and/or grazing. These are lands located primarily in economically depressed areas. Sound management of acquired areas will contribute to:

- (a) Stabilization of the local economy.
- (b) Environmental enhancement.
- (c) Prevention of stream pollution in rural America.
- (d) Improved timber production.

Lands primarily valuable for recreation are not included in this program, since acquisition of such lands is financed under the Land and Water Conservation Fund Act program.

See the tabulation at the end of this section for more detailed information on the actual and planned accomplishments in fiscal years 1972-1974 (Exhibit III).

Examples of Recent Accomplishments

In 1972 a total of 138 tracts were contracted for purchase under authority of the Weeks Act using regular appropriated Weeks Act funds. These cases involved the acquisition of 15,786 acres at a total cost of \$1,224,383. These transactions involve lands suited to timber production and watershed protection in areas where National Forest ownership needs to be consolidated or extended to facilitate these programs. Many of the smaller parcels, 20-40-80 acres in size, are purchases made at a price equal to, or nearly equal to, the cost that would otherwise have been incurred to survey, post, and mark the National Forest boundary surrounding the property.

EXHIBIT I - Recreation-Public Use--FY 1974
 Capital Investments--Distribution by National Forests

PROJECTS OTHER THAN MINOR VISITOR INFORMATION CENTER FACILITIES

		Quality improvement: of existing sites	New sites, expansion, and planning	
Region	Forest and Project	Water and: sewage	Camp and picnic	Total
		systems	systems	Estimated: capital (No.) : cost : (Capacity) : (No.) : cost : investment
Northern	Gallatin (Red Cliff Campground)		2	\$70,000
Rocky Mountain	Roosevelt (Poudre River Campground)	\$39,000		\$70,000
Southwestern	Coronado (Rucker and Riggs Flat Campground)	28,000		39,000
Intermountain	Sawtooth (Sawtooth NRA)			
	Bridger (Boulder Lake Campground)	320*	1	65,000
California	Sequoia (Princess Campground)	495*	1	43,000
	Stanislaus (Pinecrest Beach extension)	460		65,000
Pacific	Mt. Hood (Multnomah Falls Lodge)	1	23,000	
Northwest	Wenatchee (Nason Creek Campground)	1	16,000	
Eastern	White Mountain (Black Brook)			
	Green Mountain (Hapgood Pond)	17,000		
	Monongahela (Spruce Knob-Seneca Rocks)	30,000		
	Wayne (Burr Oak Campground)	1	14,000	
	Wayne-Hoosier (Project Mainstream)		11,900	
	Totals	3	178,900	1,350
			5	1,125,000
				1,303,930

* Completion of project previously started.

EXHIBIT II--Recreation-Public Use--FY 1974
 Capital Investments--Distribution by National Forests

MINOR VISITOR INFORMATION SERVICE FACILITIES

Region	Forest	: Number of sites	: Total capital investment
<u>INTERMOUNTAIN</u>	Teton	1	\$16,000
	Sawtooth	2	41,500
	<u>Subtotal</u>	3	57,500
<u>PACIFIC NORTHWEST</u>	Deschutes	1	22,500
<u>SOUTHERN</u>	Ouachita	1	30,000
<u>EASTERN</u>	White Mountain	2	30,000
<u>ALASKA</u>	North Tongass	4	9,000
<u>TOTAL, ALL REGIONS</u>		11	149,000

EXHIBIT III -- WEEKS ACT PURCHASES 1972-1974

	FY 1972 Actual		FY 1973 Estimated		FY 1974 Estimated
	Options to be accepted:	Options to be accepted:	Options accepted: Acres Obligation	Options accepted: Acres Obligation	Options to be accepted: Acres Obligation
Alabama - Talladega	1: 1:	\$200:			
Arkansas - Ozark	5: 1,245:	69,442:	11: 844:	\$99,000:	8: 1,110:
Illinois - Shawnee	5: 297:	35,999:	6: 485:	69,000:	10: 650:
Indiana - Hoosier	17: 1,470:	177,236:	15: 1,976:	181,000:	5: 550:
Kentucky - Redbird Purchase Unit Daniel Boone	37: 8,437:	406,990:	34: 9,722:	667,250:	20: 8,100:
Michigan - Hiawatha	1: 80:	2,400:	3: 280:	20,000:	2: 210:
Huron-Manistee Ottawa	25: 556:	42,467:	7: 180:	27,000:	10: 500:
Minnesota - Chippewa	2: 80:	2,300:	1: 40:	1,000:	2: 200:
Missouri - Clark	3: 360:	7,800:	1: 37:	1,000:	3: 500:
Mark Twain	1: 320:	17,600:	3: 360:	25,000:	5: 300:
Nebraska - Nebraska	6: 291:	18,246:	5: 765:	41,000:	5: 325:
New Hampshire - White Mountain	1: 50:	3,250:	2: 300:	18,000:	1: 200:
North Carolina - Uwharrie	1: 1:	100:	1: 100:	16,500:	1: 100:
Ohio - Wayne	22: 1,745:	127,131:	10: 594:	39,000:	10: 1,200:
South Carolina - Francis Marion	1: 175:	11,934:	1: 16:	1,700:	1: 1,700:
Tennessee - Cherokee	1: 52:	5,200:	1: 5:	1,000:	1: 1,000:
Pennsylvania - Allegheny	1: 1:	1:	1: 1:	1:	1: 1:

EXHIBIT III -- WEEKS ACT PURCHASES 1972-1974
(continued)

	FY 1972 Actual		FY 1973 Estimated		FY 1974 Estimated
Options to be accepted:	Options to be accepted:	Options to be accepted:	Options to be accepted:	Options to be accepted:	Options to be accepted:
Vermont - Green Mountain	1: 70: 7,000:		1: 75: 18,000:		
Virginia - George Washington	1: 25: 2,977:		1: 84: 4,665:		
Jefferson	1: 25: 1,683:		1: 120: 20,250:		
West Virginia - Monongahela	1: 1: 500:		1: 205: 27,000:		
Wisconsin - Chequamegon Nicolet	2: 160: 3,640:		2: 320: 8,500:		
	3: 196: 8,600:		3: 120: 8,000:		
Subtotal	138: 15,786: 965,345:		110: 16,683: 1,385,865:		
Surveys and related acquisition costs ..					
Unobligated balance carried forward					
Unobligated balance brought forward					
Total appropriation					

FOREST ROADS AND TRAILS

Appropriation Act, 1972	\$148,740,000
Appropriation Act, 1973	158,840,000
Budget estimate, 1974	87,700,000
Decrease	<u>-71,140,000</u>

PROJECT STATEMENT

The following tabulation reflects the total program for the construction and maintenance of roads and trails on the National Forests and Grasslands by combining the funds available under the appropriation "Forest roads and trails" with the permanent appropriation of 10 percent of National Forest receipts.

Project	1972	1973	1974	Increase or decrease
	estimate	estimate	estimate	or decrease
1. Construction of roads and trails	\$136,813,838	\$119,702,955	\$76,800,000	-\$42,902,955
2. Maintenance of roads and trails	38,119,944	36,795,000	35,000,000	-1,795,000
Total obligations ..	174,933,782	156,497,955	111,800,000	-44,697,955
Transfer from Roads and Trails for States a/	-22,661,542	-33,871,106	-40,900,000	-7,028,894
Program under Forest Roads and Trails contract authority	152,272,240	122,626,849	70,900,000	-51,726,849
Obligations incurred under unfunded contract authority	-3,532,240	36,213,151	16,800,000	-19,413,151
<u>Appropriation or estimate</u>	<u>148,740,000</u>	<u>158,840,000</u>	<u>87,700,000</u>	<u>-71,140,000</u>

a/ The annual appropriation language and the Department presentation combine the appropriation for Forest roads and trails made pursuant to 23 USC 205 and the appropriation of 10 percent of forest receipts for construction and maintenance of roads and trails pursuant to 16 USC 501. This merger of funds is made in order to simplify the programming, allotment, and accounting of funds at the field level.

A decrease of \$71,140,000 is proposed to meet cash requirements for liquidation of contract authority. This appropriation provides for the liquidation of obligations incurred for the construction and maintenance of forest roads and trails pursuant to the authority contained in the Federal-Aid Highway Act. An appropriation of \$87.7 million for 1974 is required to:

- (1) Pay for obligations of the prior years which will be due for payment in fiscal year 1974.
- (2) Pay the portion of the 1974 obligations of \$70.9 million contract authority which will require cash payment in that year.

Following is a summary of the road and trail construction and maintenance to be undertaken in fiscal year 1974 as compared with fiscal year 1973:

	FY 1973		FY 1974		Change	
	Miles	Amount (in thousands)	Miles	Amount (in thousands)	Miles	Amount (in thousands)
Recurrent road maintenance	96,598	\$30,585	91,818	\$30,000	-4,780	-\$585
Recurrent trail maintenance	51,802	6,210	29,656	5,000	-22,146	-1,210
Road construction ...	719	69,158	173	13,100	-546	-56,058
Trail construction ..	400	2,510	--	--	-400	-2,510

	FY 1973		FY 1974		Change	
	Miles	Amount (in thousands)	Miles	Amount (in thousands)	Miles	Amount (in thousands)
Surveys, plans, and supervision (timber purchaser roads) ..	3,678	37,925	6,580	53,700	+2,902	+15,775
Supplementing timber purchaser construction	660	9,910	433	10,000	-227	+90
Road purchase		200		-		-200
Total program level		156,498		111,800		-44,698

The \$44,697,955 program decrease has been made possible by shifting priorities to timber access and by assigning a greater degree of responsibility for this access to the timber purchaser. Mileage of timber purchaser roads will be increased by 670 miles in 1974.

The shift in the proposed fiscal year 1974 forest road and trail program from direct construction to support activities for timber purchaser road construction is a result of increased timber needs, and the need to reduce direct Federal outlays.

The proposed program provides for continued maintenance of the existing transportation system and provides environmental protection through assuring the necessary support for timber purchaser construction. The requested construction funds will be used primarily for bridge construction and reconstruction on major timber access routes and the requested supplementation funds will be used to increase opportunities for larger timber yields.

The proposed work will be in accord with the National Environmental Policy Act (NEPA), standards promulgated by the Highway Safety Act of 1966 and bridge standards established by the 1968 Federal-Aid Highway Act. NEPA necessitates the examination of a wider range of technical alternatives and leads to project modifications after resource planning has established the administrative desirability and feasibility of access. This generates increased costs due to intensified analysis and review in the planning stages as well as higher cost technical solutions to reduce identified adverse impacts.

The Federal Highway Administration proposes to make applicable to Federally administered areas all Highway Safety Standards (23 CFR II) on February 15, 1973. Until that time only Standard No. 13 dealing with traffic engineering services is applicable. It has generated increased costs by requiring the development of a program for applying more intensive traffic engineering measures and techniques, including the use of traffic control devices, to reduce the number and severity of traffic accidents.

Federal Highway Administration bridge standards are directed to bridges located on Federal Aid systems; however, because of their applicability these standards have been adopted by the Forest Service as being appropriate for over 7,000 road bridges and 1,600 trail bridges under its jurisdiction. As a result, increased costs are generated by required inspections, inventories, and, where bridges are found to be below standard, corrective actions, that will insure public safety.

The following tabulation shows the current status of the forest roads and trails system and projected needs:

Item	Existing Mileage	Estimated Mileage Needing Reconstruction	Estimated Additional Mileage Needed
Roads	198,206	143,665	140,183
Trails	99,687	49,409	23,862

Summary of Work Progress and Accomplishment

	<u>By the Government</u>			<u>By Timber Purchaser</u>		
	<u>FY 1972</u>	<u>FY 1973</u>	<u>FY 1974</u>	<u>FY 1972</u>	<u>FY 1973</u>	<u>FY 1974</u>
Roads (miles)	844	719	173	6,904	6,630	7,300
Trails (miles)	542	400	--	--	--	--

Status of Unfunded Authorizations

Unfunded contract authority beginning of 1973	\$486,096,000
Appropriation, 1973	<u>-158,840,000</u>
Total unfunded beginning of 1974	327,256,000
Unobligated contract authority lapsing	-39,480,000
1974 Budget estimate (cash requirements)	<u>-87,700,000</u>
Balance to remain unfunded as of June 30, 1974	<u>200,076,000</u>

Analysis of Cash Requirements

1. Unliquidated obligations, June 30, 1972	\$93,295,632
2. Estimated cash requirements to finance 1973 program	<u>66,750,956</u>
3. Total cash requirements by June 30, 1973	160,046,588
4. Less cash on hand 1973: Balance from 1972	10,206,588
Appropriation, 1973	<u>158,840,000</u>
5. Cash carried forward to 1974	<u>169,046,588</u>
6. 9,000,000	
Obligations in 1973 and prior years for which cash was not	
provided in items 1 and 2	43,500,000
7. Estimated cash required to finance 1974 program	<u>a/ 53,200,000</u>
8. Cash brought forward from 1973	<u>-9,000,000</u>
9. Total cash required in 1974	<u>87,700,000</u>

a/ An estimated 75 percent of the \$70.9 million new obligations will require cash payments during the fiscal year.

GEOGRAPHIC BREAKDOWN OF OBLIGATIONS

Forest Roads and Trails

	FY 1973 <u>(estimate)</u>	FY 1974 <u>(estimate)</u> 1/
Alabama	\$568,000	\$122,000
Alaska	3,450,000	334,000
Arizona	3,922,000	822,000
Arkansas	1,668,000	420,000
California	27,282,000	10,038,000
Colorado	7,619,000	396,000
District of Columbia	4,056,955	- -
Florida	839,000	272,000
Georgia	1,569,000	166,000
Idaho	15,995,000	2,025,000
Illinois	378,000	18,000
Indiana	221,000	7,000
Kentucky	862,000	51,000
Louisiana	820,000	623,000
Maine	100,000	5,000
Michigan	2,629,000	146,000
Minnesota	1,443,000	77,000
Mississippi	956,000	772,000
Missouri	911,000	288,000
Montana	11,428,000	2,007,000
Nebraska	135,000	11,000
Nevada	1,767,000	68,000
New Hampshire	884,000	71,000
New Mexico	6,086,000	361,000
North Carolina	1,055,000	114,000
North Dakota	135,000	- -
Ohio	194,000	11,000
Oklahoma	171,000	62,000
Oregon	28,657,000	15,283,000
Pennsylvania	1,110,000	150,000
Puerto Rico	113,000	1,000
South Carolina	893,000	293,000
South Dakota	1,623,000	62,000
Tennessee	649,000	45,000
Texas	802,000	392,000
Utah	3,597,000	96,000
Vermont	712,000	68,000
Virginia	1,740,000	35,000
Washington	13,381,000	4,887,000
West Virginia	2,020,000	51,000
Wisconsin	1,371,000	96,000
Wyoming	2,686,000	154,000
Total	<u>156,497,955</u>	<u>40,900,000</u>

1/ Above planned obligations for fiscal year 1974 include only the distribution of the 10% Fund (Roads and Trails for States) pursuant to 16 USC 501. Distribution of obligations under Forest Roads and Trails contract authority will be made as soon as program shifts are finalized.



Proposed Change in Language

Change in language is proposed as follows. Deleted matter is enclosed in brackets.

For expenses necessary for carrying out shall be merged with and made a part of this appropriation[; Provided further, That not less than the amount made available under the provisions of the Act of March 4, 1913, shall be expended under the provisions of such Act].

Deletion is proposed to simplify and shorten the wording of this item. The proviso is not essential since the Act of March 4, 1913 (16 USC 501), provides for the method to be used for distribution to the States under that Act.

Allocation to the various States of total available merged funds will continue to be made on the basis of planned program needs. The total amount allocated will not be less than the amount which would be available from the 10 percent of National Forest receipts as provided by the Act of March 4, 1913. This deletion will not affect, in any way, the purposes or areas in which these funds have heretofore been used.





ACQUISITION OF LANDS FOR NATIONAL FORESTS, SPECIAL ACTS

Appropriation Act, 1972				\$80,000
Appropriation Act, 1973				80,000
Budget estimate, 1974				94,000
Increase				<u>+14,000</u>

PROJECT STATEMENT

Project	1972	1973	1974	or	Increase
		estimate	estimate	decrease	
1. Cache National Forest, Utah, Act of 5/11/38, as amended	\$12,310	\$20,000	\$20,000	--	
2. Uinta-Wasatch National Forests, Utah, Act of 8/26/35, as amended	20,000	20,000	20,000	--	
3. Toiyabe National Forest, Nevada, Act of 6/25/38, as amended	7,963	8,000	8,000	--	
4. Angeles National Forest, California, Act of 6/11/40	32,000	32,000	14,000	-\$18,000	
5. San Bernardino and Cleveland National Forests, California, Act of 6/15/38	--	--	32,000	32,000	
Unobligated balance reverted to National Forests Fund	7,727	--	--	--	
Appropriation or estimate	80,000	80,000	94,000	+14,000	

The Congress has enacted several special laws which authorize appropriation from the receipts of specified National Forests for the purchase of lands to minimize erosion and flood damage. Amounts appropriated and laws under which authorized are shown above.

These are critical watershed lands needing soil stabilization and vegetative cover restoration to prevent serious erosion and damaging floods within these National Forests. Land treatment measures must be applied and subsequently maintained on all lands in these areas to make corrective action fully effective. To assure full program effectiveness, the intermingled private lands must be acquired by the Federal Government. The results will be reflected in improved watershed conditions, social benefits, and development of economic strength in local communities.

Cache National Forest. In fiscal year 1972, funds were available from two sources for the purchase of lands within the Cache National Forest in Utah.

1. The Receipts Act of May 11, 1938, as amended -- \$20,000. This is an annual appropriation.
2. The Act of July 24, 1956 -- \$200,000 was appropriated under this authority in fiscal years 1957 through 1960. These funds remain available until expended. Through fiscal year 1972, \$189,219 has been obligated from this appropriation.

These funds are used to acquire key tracts of land in the steep, rough, and highly important watershed areas lying north of the Ogden River along the Wasatch front and on Wellesville Mountain of the Cache National Forest. These are rugged mountain lands above the river valley which have been damaged and their watershed functions impaired through forest fires or overgrazing. This contributes to excessive rainfall runoff causing severe erosion. The damaged watershed lands are potential sources of floods and mudrock flows. Many tracts of land are located in the north fork of Ogden River and on the drainage of Pineview Reservoir, a Federal reclamation project. Others are within the watersheds of the city of Ogden and the



other small towns along the Wasatch front. Public ownership of these lands and subsequent restoration and protection of their vegetative cover is a highly important part of a vigorous cooperative program with the local community and agencies.

The appropriation of \$20,000 under the Act of May 11, 1938, is from receipts of the Cache National Forest. In the absence of this appropriation, the State of Utah would receive 25 percent of these receipts for roads and school purposes in the local counties involved. Therefore, the local counties, in effect, are contributing one-fourth of the amount of this appropriation. These appropriations are extremely important to the continuation of a vital and worthwhile program extending almost thirty years and shared in by both the local agencies and the Federal Government through the National Forests.

The 1956 Act requires that expenditures of Federal funds be matched by contributions by local agencies or people. This requirement has been met through donations of money and lands valued at \$189,219. The remainder of the contributions in the amount of \$10,781 are expected in fiscal year 1973.

Through fiscal year 1972, 29,352 acres have been approved for purchase pursuant to the Receipts Act of 1938, and 15,957 acres under the Special Act of 1956. The 1973 objective is to acquire 840 additional acres of these critical watershed lands. A similar acreage is expected to be acquired in 1974.

Uinta-Wasatch. In fiscal years 1963 through 1972, an appropriation of \$200,000 was made under the Uinta-Wasatch Receipts Act of August 26, 1935, for acquiring critical watershed lands in the American Fork Canyon watershed. A total of 2,841 acres has been approved for purchase through fiscal year 1972, and an estimated 400 acres will be acquired each year during 1973 and 1974.

Toiyabe National Forest. \$8,000 was appropriated under this Act in each of fiscal years 1972 and 1973. The 1973 and 1974 objective is to acquire 40 acres each year.

Angeles National Forest. \$32,000 was appropriated in fiscal years 1972 and 1973 and \$14,000 is proposed for 1974 to purchase important watershed lands. Acquisition is needed to minimize erosion and flood damage. The 1973 objective is to acquire 80 acres. The 1974 objective is to acquire 30 acres.

San Bernardino and Cleveland National Forests. The \$32,000 proposed for fiscal year 1974 is to acquire 80 acres of important watershed lands. Acquisition is needed to minimize erosion and flood damage.

Proposed Change in Language

Change in language is proposed as follows. New language is underscored.

For acquisition of land to facilitate Angeles National Forest, California, Act of June 11, 1940 (54 Stat. 299) \$ _____; San Bernardino and Cleveland National Forests, California, Act of June 15, 1938 (52 Stat. 699), as amended, \$32,000; in all,

This change in language is proposed to facilitate the acquisition of 80 acres of important watershed lands. Acquisition is needed to minimize erosion and flood damage.

ACQUISITION OF LANDS TO COMPLETE LAND EXCHANGES

Appropriation, 1972	\$26,035
Appropriation, 1973	- -
Budget estimate, 1974	<u>55,300</u>
Increase	<u>+55,300</u>

PROJECT STATEMENT

Project	: 1972		1973	1974	: Increase	
	Project	1972	estimate	estimate	or	decrease
Purchase of land, State of:						
California	\$26,000:		- -	\$54,585:	+\$54,585	
Montana	- -	:	- -	750:	+750	
Unobligated balance brought forward ..	- -	:	-35:	-35:	- -	
Unobligated balance carried forward ..	35:		35:	- -		-35
Total available or estimate	26,035:		- -	55,300:	55,300	

As of June 30, 1972, 80 acres were acquired on the Sierra National Forest in California, at a cost of \$26,000. It is estimated that 153 acres will be acquired in 1974.

Proposed New Language Under Existing Legislation

For acquisition of lands in accordance with the Act of December 4, 1967 (16 U.S.C. 484a), to remain available until expended, \$55,300, to be derived from deposits by public school authorities under said Act.

Explanation of New Language

This new language is necessary to make provision for financing the purchase of certain lands in Montana and California.

Present legislation stipulates that deposits made by public school districts or public school authorities to provide for cash equalization of certain land exchanges are, when appropriated, used to acquire similar lands suitable for National Forest System purposes in the same State as the National Forest lands conveyed in the exchange.

The following deposits have been made:

<u>Fiscal Year</u>	<u>State</u>	<u>Amount</u>
1970	Montana	\$750
1971	California	9,800
1972	California	44,750



ASSISTANCE TO STATES FOR TREE PLANTING

Appropriation Act, 1972	\$1,028,000
Appropriation Act, 1973	1,020,000
Budget estimate, 1974	1,020,000

PROJECT STATEMENT

Project	: 1972	: estimate	: 1974 estimate	: Increase or decrease
Assistance to States for tree planting	:\$1,012,596	:\$1,118,830	:\$1,035,000	-\$83,830
Unobligated balance brought forward ...	: -98,426:	-113,830:	-15,000:	+98,830
Unobligated balance carried forward ...	: 113,830:	15,000:	- - :	-15,000
Appropriation or estimate	: 1,028,000:	1,020,000:	1,020,000:	- -

The program authorized under Section 401 of the Agricultural Act of 1956 (16 USC 568e) provides assistance to States in their forestation and tree improvement programs. Needed rehabilitation on State and county forest lands has resulted from this program.

New and expanded tree improvement programs which are partially or totally funded under this program are underway in 41 States. Nationally, the States expend three times more than they receive under this program for tree improvement.

Assistance will emphasize seed orchard establishment aimed at the production of improved genetic quality tree seed. Reforestation work will be carried out to restore low-yielding or non-productive forest lands to fuller production of commercial wood. In addition, attending benefits include:

- (1) Erosion control
- (2) Wildlife habitat improvement
- (3) Expanded recreational land use potentials
- (4) Environmental enhancement

Examples of Recent Accomplishments

Superior cottonwood cuttings made available. A special project under this program was set up to rapidly increase foundation stock of a superior strain of cottonwood. Results of tests showed that this superior strain of cottonwood can grow 20 percent more wood per acre than ordinary cottonwood. The foundation stock was made available to States in the lower Mississippi Valley area where the growing material is available to the public for planting on an estimated 1,000 acres during the 1972-73 season (Figure 39).

New planting techniques on State lands. A large reforestation project is being done in Washington so the land will be most productive with full consideration for enhancing and maintaining environmental quality. Washington State Department of Natural Resources is harvesting old growth spruce-hemlock on a 98,000 acre tract. About 5,500 acres are scheduled for planting during the 1972-73 season. This tract is an excellent demonstration of the best known silviculture practices. Container-grown seedlings are being planted, streams are protected, and yarding techniques, road layout and other measures are used to protect watershed values. Pre-commercial thinning is being done where needed and some of the area has been fertilized since recent research has shown that much gain can be expected from fertilization.

GEOGRAPHIC BREAKDOWN OF APPROPRIATION
Assistance to States for Tree Planting

<u>State</u>	1972 (actual)	1973 (estimate)	1974 (estimate)
Alabama	\$19,000	\$22,000	\$24,000
Arkansas	10,000	10,000	10,000
California	18,000	18,000	18,000
Colorado	5,000	5,000	5,000
Connecticut	4,000	4,000	4,000
Florida	29,500	30,000	30,000
Georgia	19,000	20,000	20,000
Hawaii	35,000	35,000	35,000
Idaho	10,000	10,000	10,000
Illinois	8,000	8,000	8,000
Indiana	12,400	12,500	12,500
Iowa	7,000	7,000	7,000
Kansas	10,000	10,000	12,000
Kentucky	12,000	12,000	12,000
Louisiana	16,500	16,500	16,500
Maine	15,000	15,000	15,000
Maryland	5,000	5,000	5,000
Michigan	30,000	30,000	30,000
Minnesota	75,000	73,000	50,000
Mississippi	11,500	12,000	14,500
Missouri	26,000	28,000	28,000
Montana	14,500	14,000	14,000
New Hampshire	10,000	10,000	10,000
New Jersey	12,000	12,000	12,000
New York	30,000	30,000	30,000
North Carolina	12,000	13,000	14,000
Ohio	14,000	14,000	14,000
Oklahoma	10,000	10,000	10,000
Oregon	80,000	78,000	60,000
Pennsylvania	24,000	29,000	29,000
South Carolina	22,000	22,000	22,000
Tennessee	11,100	11,500	14,000
Texas	14,900	15,000	15,000
Vermont	5,500	5,500	5,500
Virginia	23,000	23,000	23,000
Washington	80,000	76,000	60,000
West Virginia	9,600	10,000	10,000
Wisconsin	20,000	20,000	20,000
Wyoming	10,000	10,000	10,000
Special project--seed harvester	- -	- -	2,000
Special project--Cottonwood increase	8,000	- -	- -
Total to States	788,500	786,000	741,000
Forest Service administration and technical assistance	239,500	234,000	279,000
Total	1,028,000	1,020,000	1,020,000



Cutting superior cottonwood "whips" at the Forest Service State and Private Forestry expansion nursery. Title IV funds were used to increase foundation stock by taking cuttings from proven genetically superior trees and increasing the stock through special propagation techniques to accelerate production.



Superior cottonwood "whips" which cooperating States will receive as foundation stock for nursery production. These will be distributed to State nurseries where they will be cut into 18 inch lengths and planted in the nursery for production of genetically superior commercial planting stock. This material will grow 20% faster than will ordinary cottonwood trees.

Figure 39



CONSTRUCTION AND OPERATION OF RECREATION FACILITIES

Appropriation Act, 1972 .....	.....	.....	.....	.....
Appropriation Act, 1973 .....	.....	.....	.....	.....
Budget estimate, 1974 .....	.....	.....	\$3,546,000	
Increase .....	.....	.....	+3,546,000	

PROJECT STATEMENT

Project	1973	1974	estimate	Increase or decrease
Recreation construction, administration, operation, and maintenance	- -	\$3,546,000	+\$3,546,000	

These are funds proposed for appropriation from admission and user fees collected under the Land and Water Conservation Fund Act of 1965, as amended by PL 92-347.

They will be used:

- (1) To issue the Golden Age passport (free annual entrance permit to persons 62 years of age or older) within limits established by PL 92-347, July 11, 1972.
- (2) To bring facilities on the 3,053 fee-designated sites on National Forest lands to an acceptable standard of repair for visitor use, safety, and resource protection.
- (3) For increased efforts in law and regulation enforcement to assure visitor safety and to reduce the vandalism which causes more than \$2 million damage annually. Past and projected receipts are shown in Figure 40.

Proposed New Language Under Existing Legislation

For construction, operation, and maintenance of outdoor recreation facilities, including collection of special recreation use fees, to remain available until expended, \$3,546,000 to be derived from the special account established by section 4(e) of the Land and Water Conservation Act of 1965, as amended (16 U.S.C. 4601): Provided, That not more than 40 per centum of the foregoing amount shall be available for the enhancement of the fee collection system established by section 4 of such Act, including the promotion and enforcement thereof.

Public Law 92-347, approved July 11, 1972, amended the Land and Water Conservation Fund Act of 1965 to provide that the Forest Service (and other bureaus) may collect recreation admission fees at designated National Recreation Areas and "special recreation use fees for the use of sites, facilities, equipment, or services furnished at Federal expense." After distribution to the States and Counties and Roads and Trails for States appropriation as required under the Acts of 5/23/08, 7/22/37, and 3/14/13, the remaining fees (approximately 65 percent of total collected) are to be deposited into a "special account in the Treasury of the United States to be administered in conjunction with, but separate from, the revenues in the Land and Water Conservation Fund. Revenues in the special account shall be available for appropriation without prejudice to appropriations from other sources for the same purposes, for any authorized outdoor recreation function of the agency by which the fees were collected." The proposed language provides for a new special appropriation account to implement this provision of the Act.

The 1974 estimate includes receipts from January 1, 1972, under the provisions of Public Law 90-401, as well as estimated receipts to be collected in 1973 under Public Law 92-347.

Admission and User Receipts From National Forest Recreation Sites



* Projected

1/ Fee provision of L&WCF Act expired for a portion of the year causing loss of receipts.

Figure 40

SCIENTIFIC ACTIVITIES OVERSEAS (SPECIAL FOREIGN CURRENCY PROGRAM)

Appropriation Act, 1972 .....	..	..	..
Appropriation Act, 1973 .....	..	..	..
Budget estimate, 1974 .....	..	\$1,000,000	
Increase .....	..	<u>\$1,000,000</u>	

PROJECT STATEMENT

Project	:	1973	:	1974	:	Increase
				estimate	or	
Scientific activities overseas	:	- -	:	\$1,000,000	:	+\$1,000,000

This research program relates directly to the goal of helping the Nation meet its requirements for timber while meeting environmental quality standards. It is carried out through funding with foreign currencies which the Treasury Department determines is in excess of the normal requirements of the United States. Research is carried on through agreements negotiated with research institutions and organizations in foreign countries and directly backstops the ongoing domestic research program aimed at solving forest resource management problems. This research capability represents a major supplement to the domestic Forest Service research program.

The close coordination of the special foreign currency research program and domestic research activities would make possible a comprehensive international, multilateral effort in forestry research.

The proposed funding of \$1 million would be used to intensify research in various aspects of forest resource management. Special emphasis will be placed on:

- (1) Plant physiology and genetics to provide improved strains of forest trees with faster growth rates and more insect and disease resistance.
- (2) Use of municipal and industrial wastes in fertilization of forest stands.
- (3) Fate of applied fertilizers in different forest and range ecosystems.
- (4) Effects of tree fertilization on wood quality.
- (5) Influences of ditching and fertilization on the quantity and quality of ground and surface water.
- (6) Effects of selected parasites and predators on populations of destructive forest and range insect pests.
- (7) Effects of air and water pollutants on the ecology of plant and animal communities.
- (8) Relationship between improved timber harvesting machinery or methods and site damage.

Proposed New Language Under Existing Legislation

For payments in foreign currencies owed to or owned by the United States for forestry research and other functions related thereto authorized by section 104(b)(3) of the Agricultural Trade Development and Assistance Act of 1954, as amended (7 U.S.C. 1704(b) (3)), \$1,000,000, to remain available until expended: Provided, That this appropriation shall be available, in addition to other appropriations for these purposes, for payments in the foregoing currencies; Provided further, That funds appropriated herein shall be used for payments in such foreign currencies as the Department determines are needed and can be used most effectively to carry out the purposes of this paragraph.

The 1974 Budget estimate for the Forest Service provides \$1 million for a special foreign currency research program on forestry projects. In 1973 and prior years such projects were funded by the special foreign currency appropriation of the Agricultural Research Service.

To avoid establishing a separate new administration for this overseas research the administrative costs of the forestry research program will continue to be funded in the Agricultural Research Service account.

The translation of foreign research documents currently carried out by the National Science Foundation under contract will be funded for agricultural research documents by ARS and for forestry research documents by the Forest Service.

The above language, therefore, provides funds to the Forest Service for making agreements for forestry research as authorized under Section 104(b) (3) of the Agricultural Trade Development and Assistance Act of 1954, as amended (7 U.S.C. 1704(b)(3)).



YOUTH CONSERVATION CORPS

NOTE: For budgetary purposes, the entire appropriation is shown under the Forest Service. However, one-half of the appropriation each year is transferred to the Department of the Interior.

Appropriation Act, 1972	\$3,500,000
Appropriation Act, 1973	3,500,000
Budget estimate, 1974	<u>10,000,000</u>
Increase	<u>+6,500,000</u>

PROJECT STATEMENT

Project	1972	estimate	1973	1974	: Increase or decrease
Youth Conservation Corps	\$2,757,525:	\$3,500,000	\$10,037,000	+\$6,537,000	
Unobligated balance brought forward:	-1,354,906:	-2,097,381:	-2,097,381:		- -
Unobligated balance carried forward:	<u>2,097,381:</u>	<u>2,097,381:</u>	<u>2,060,381:</u>	<u>-37,000</u>	
Appropriation or estimate 1/	<u>3,500,000:</u>	<u>3,500,000:</u>	<u>10,000,000:</u>	<u>+6,500,000</u>	

1/ Includes allocation to Department of the Interior: 1972 and 1973, \$1,750,000; 1974, \$5,000,000.

An increase of \$6.5 million is proposed. These funds will be used for:

- (1) Increasing total number of youth participating, with emphasis on providing more opportunities for urban and disadvantaged youth.
- (2) Awarding grants to States. Preference will be given to States with fewer Federal lands assuming competing applications are otherwise comparable. Preference will also be given to State applications where no more than 50 percent of the cost of a pilot project is to be financed by Federal grant.

The Act of August 13, 1970 (84 Stat. 794), as amended by Public Law 92-597, authorizes continuation of the Youth Conservation Corps Program on Federal lands, and establishes a pilot grant program to assist States in establishing YCC projects on non-Federal public lands. The Departments of the Interior and Agriculture share the program equally.

The primary purposes of the program are to:

- (1) Provide gainful employment to 15 through 18 year old youths representing all segments of society.
- (2) Further development and maintenance of the natural resources of the United States by the youth, upon whom will fall the ultimate responsibility for maintaining and managing these resources for the American people.
- (3) Develop an understanding and appreciation in Corps participants of the Nation's natural environment and heritage.

This integrated conservation work, learn, and employment program is designed to accomplish needed conservation work, provide employment and income to youth, teach proper work habits, encourage greater appreciation of the management of natural resources, and increase individual pride and dignity. Conservation work-learn projects on public lands include recreation facilities maintenance and construction, range and wildlife habitat improvement, timber stand improvement, trail improvement and construction, and visitor information services. Recruiting guidelines have been established to meet the mandate of the Congress that there be a representative mix of youth from all economic, social, and racial backgrounds.

Evaluation of the Federal pilot YCC programs in 1971 and 1972 by Department personnel and the University of Michigan's Institute for Social Research indicate that the purposes of the Act were achieved. With \$3.5 million provided for the



1972 summer program, the 3,495 young men and women employed accomplished conservation work appraised at a value of \$2.6 million. Ninety-four percent were satisfied with the program, and 99 percent thought it was worthwhile. Only four percent of the youth were unable to complete the summer program. Environmental education showed significant gains.

Proposed Change in Language

Change in language is proposed as follows. New language is underscored and deleted matter is enclosed in brackets.

1 For expenses necessary to carry out the provisions of the Act of
August 13, 1970 [(Public Law 91-378), establishing the Youth Con-
2 servation Corps, \$3,500,000] as amended by Public Law 92-597,
\$ to remain available until [expended] the end of the
fiscal year following the fiscal year for which appropriated:
Provided, That

Change 1 is necessary to reflect reference to the amendment to the Act of August 13, 1970.

Change 2 is proposed to include in the language the provisions of Public Law 92-597. The August 13, 1970, Youth Conservation Corps Act set up a three-year pilot program with the proviso that the funds appropriated be made available until expended. The October 27, 1972, amendment provides that the funds be available for expenditure for two years.





ACQUISITION OF LANDS FOR UNTIA NATIONAL FOREST

PROJECT STATEMENT

Project	1972	1973	1974
		estimate	estimate
Acquisition of lands for Uinta National Forest .	\$105	\$96,659	- -
Unobligated balance brought forward	-96,764	-96,659	- -
Unobligated balance carried forward	<u>96,659</u>	- -	- -
<u>Appropriation or estimate</u>	- -	- -	- -

Public Law 89-226 authorized the purchase of approximately 10,000 acres of non-Federally owned land within a described part of the Uinta National Forest in Utah for the purpose of promoting the control of floods and the reduction of soil erosion through restoration of adequate vegetative cover. \$300,000 were appropriated in fiscal year 1967.

As of June 30, 1972, 8,847 acres have been acquired at a cost of \$203,341.



ACQUISITION OF LANDS FOR WASATCH NATIONAL FOREST

PROJECT STATEMENT

Project	1972	1973 estimate	1974 estimate
Acquisition of lands for Wasatch National Forest			
Unobligated balance brought forward	-\$52,593	-52,593	- -
Unobligated balance carried forward	52,593	- -	- -
<u>Appropriation or estimate</u>	<u>- -</u>	<u>- -</u>	<u>- -</u>

The Act of September 14, 1962 (PL 87-661) provided authorization for the appropriation of \$400,000 for purchase of privately owned lands within the Wasatch National Forest in Utah to aid in control of floods and to reduce soil erosion. The full amount of this authorization has been appropriated with the funds remaining available until expended.

As of June 30, 1972, approximately 12,741 acres had been approved for purchase under this authority. It is expected that the remaining lands will be acquired by the end of fiscal year 1973.



ACQUISITION OF LANDS FOR SUPERIOR NATIONAL FOREST

PROJECT STATEMENT

<u>Project</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>
	<u>estimate</u>	<u>estimate</u>	
Acquisition of lands for Superior National Forest			
Forest	\$25	\$5,190	- -
Unobligated balance brought forward	-5,215	-5,190	- -
Unobligated balance carried forward	5,190	- -	- -
Appropriation or estimate	- -	- -	- -

The Act of June 22, 1948 (PL 80-733) as amended, provided authorization for the appropriation of \$4.5 million for the purchase of lands and improvements thereon in the Boundary Waters Canoe Area, Superior National Forest, Minnesota. The full amount of this authorization has been appropriated with the funds remaining available until expended.

This purchase program is in its final stages. The remaining balance of \$5,190 is held in reserve principally for possible excess awards for purchase cases currently in condemnation proceedings.



ACQUISITION OF LANDS FOR CACHE NATIONAL FOREST

PROJECT STATEMENT

Project	1972	1973	1974
		: estimate	: estimate
Acquisition of lands for Cache National Forest .	\$25:	\$10,781:	--
Unobligated balance brought forward	-10,806:	-10,781:	--
Unobligated balance carried forward	<u>10,781:</u>	:	
Appropriation or estimate	--	--	--

The 1956 Appropriation Act provided \$200,000 for the acquisition of lands in the Cache National Forest pursuant to the Act of July 24, 1956 (70 Stat. 632). Obligations under this fund are in addition to the appropriation from National Forest receipts authorized by the Act of May 11, 1938, and provided in the appropriation, Acquisition of Lands for National Forests, Special Acts. Under the 1956 Act, funds appropriated must be matched by contribution of funds or land by local agencies or persons. Explanation of this program and the accomplishments thereunder are included under the appropriation, Acquisition of lands for national forests, special acts.







ADMINISTRATIVE PROVISIONS

Proposed Changes in Language

Changes in language are proposed as follows. New language is underscored and deleted matter is enclosed in brackets.

Appropriations to the Forest Service for the current fiscal year shall be 1 available for: (a) purchase of not to exceed [two hundred seventy-four] three hundred eight passenger motor vehicles of which [one hundred fifty- 2 two] two hundred sixty-two shall be for replacement only, and to research acquisition at Madison, Wisconsin; [and] (g) expenses incident 3 to acquisition by donation (7 U.S.C. 428a[.]); and (h) not to exceed \$100,000 for expenses pursuant to the Volunteers in the National Forests Act of 1972 (16 U.S.C. 558a-558d, 558a note).

Changes 1 and 2 would provide authority to purchase 308 passenger motor vehicles of which 262 will be replacements.

PASSENGER CARRYING VEHICLES

Replacements

During fiscal year 1974, it is proposed that the Forest Service replace 262 passenger carrying vehicles. Of these, 257 will meet replacement standards and five will require replacement because of accidents or excessive maintenance costs.

Dependability of passenger carrying vehicles is an important factor in keeping work programs on schedule and in meeting emergencies. Vehicle breakdowns while on field travel cause disruptions and delays in field work as well as loss of effective work time of employees. The continued use of over-aged equipment is undesirable from a safety standpoint since most of it is operated over rough, narrow, winding roads in mountainous country under adverse conditions. This use generally results in excessive operating and repair expenses when vehicles reach or exceed replacement standards.

In order to maintain passenger carrying vehicles in a safe and satisfactory operating condition, it is the policy of the Forest Service to schedule periodic preventive maintenance inspections, services, and tune-ups to reduce the necessity for costly repairs and major overhauls, and to minimize lost time resulting from field breakdowns.

It is desirable to maintain a reasonable balance in the age class of the passenger vehicle inventory. The age class distribution is based upon conforming with replacement standards which recognize that some units will be retired under the age standards and others under the use standard. Prescribed replacement standards, although applicable, are not always appropriate for all Forest Service vehicles because of the wide range of operating conditions and the comparatively short field season in many of the National Forests at higher elevations. Decision on replacement of passenger vehicles which reach replacement age is based on an appraisal of each unit. This involves a review of the history record combined with a mechanical inspection of the vehicle's condition and repair liability. When such appraisal indicates that the vehicle is satisfactory for further service without unreasonable repair expenditures, it is retained and assigned to lighter work, even though such action tends to upset the age standards for the fleet inventory.

The vehicles selected for replacement are those which cannot be operated another season without excessive repair expense. They are unsatisfactory for further use both as to safety and mechanical condition. The replacement authorization requested is within the normal annual replacement standards prescribed by the General Services Administration.



Essentially all passenger carrying vehicles are pooled for use by all activities with replacement of pooled units financed from a Working Capital Fund. All appropriations reimburse this fund in ratio to use of vehicles on activities financed by the respective appropriations.

None of the replacements requested will be assigned to areas served or scheduled to be served by Inter-Agency pools.

Additions

It is proposed that the Forest Service purchase 46 additional passenger carrying vehicles to replace pickups, carryalls and sedan deliveries. Since sedans and station wagons are better suited to our needs and are less costly to operate, we prefer replacement with PCV's.

Sedans or station wagons cost less to operate and maintain than a truck. During fiscal year 1973, the Forest Service is replacing 119 light trucks, such as carryalls, pickups, panels, and sedan delivery trucks, with sedans and station wagons. The total estimated cost savings is \$23,800 per year. The substitution of 46 passenger carrying vehicles for light trucks in fiscal year 1974 would result in an additional savings of about \$9,200 each year.

The Forest Service analyzes current work plans and program in determining its overall passenger carrying vehicle requirements. This analysis includes a careful study of the number of vehicles needed at each field station using as a guiding principle the ownership of only the minimum number of dependable units required to serve programs for which funds are budgeted. Also, it is Forest Service policy to utilize Inter-Agency Motor Pools or commercial car rental services to the fullest practicable extent. Passenger car use is restricted and is integrated with various activities so as to attain good utilization of all vehicles.

Additions are financed from program funds in direct relationship to the anticipated use of the equipment. Distribution of costs to appropriations is based on analysis of use of the equipment fleet for the past three years and the estimated use for the budget year.

Number of Vehicles

The Forest Service had a net active fleet of 930 passenger carrying vehicles at the start of fiscal year 1973. It will add 119 units during the year, making a total of 1,049 units available at the start of fiscal year 1974, excluding possible transfers to other agencies. It is proposed that the total number of passenger carrying vehicles be increased to 1,095 by the end of fiscal year 1974.

As of June 30, 1972, the age and mileage classes of the passenger carrying vehicles on hand, exclusive of 26 buses, were:

Age Data

<u>Year</u>	<u>No. of Vehicles</u>
1967 and older	164
1968	238
1969	203
1970	160
1971	82
1972	<u>43</u>
Total	890*



Mileage Data

<u>Miles</u>	<u>No. of Vehicles</u>
60,000 and over	206
50,000 to 59,999	159
40,000 to 49,999	154
30,000 to 39,999	134
20,000 to 29,999	109
10,000 to 19,999	89
0 to 9,999	<u>39</u>
Total	890*

* Excludes 14 vehicles on order, but not received at this time.

Use of Vehicles

Passenger carrying vehicles are used by:

- (1) Forest officers in the protection, utilization, management, and development of the National Forests and land utilization projects and in the program for control of forest pests.
- (2) Research technicians on experimental forests, and ranges, on field research projects and forest surveys.
- (3) Foresters engaged in carrying out the laws providing for State and private forestry cooperation.
- (4) Regional office field-going administrative personnel in performing, directing, and inspecting field work.

The Forest Service is essentially a field organization and its passenger carrying vehicles are located mainly at Regional, National Forest, and Ranger District headquarters, and experimental forests and ranges. There are over 225 million acres within the exterior boundaries of the National Forests.

About 574 million acres of State and private forest land are included within the areas which benefit from Federal participation in the cooperative forest program. Much of this area is without common carrier service, and most forest areas and research centers are remote from commercial travel routes, requiring extensive use of motor vehicles as a means of transportation. The major portion of transportation needs, particularly at Regional and Forest Supervisor levels and at other larger headquarters, involves multiple passenger use and can be more expeditiously and economically met by use of sedans and station wagons than by other types of vehicles.

AIRCRAFT

Replacement of Aircraft

The 1974 estimates propose replacement of four aircraft by purchase and replacements with more suitable aircraft by transfer from other agencies as available. The Forest Service currently has 57 aircraft:

- 6 Single-engine reconnaissance and transport airplanes
- 25 Light twin-engine reconnaissance and transport airplanes
- 17 Medium and heavy cargo and transport airplanes (9 medium, 8 heavy)
- 7 T34-B lead planes (2-place scout)
- 1 Helicopter
- 1 Multi-engine airplane converted to an air tanker

*57



*Excludes 3 aircraft on hand awaiting disposal, as well as a number of airplanes acquired from military surplus which are being inspected for possible renovation and use. Any such planes subsequently overhauled and put into use may replace some of the airplanes included in the above table.

The helicopter is used for experimental development of techniques and equipment, for direct tactical suppression of forest fires and in training Forest Service personnel in tactical use of helicopters.

The T34-B lead airplanes are primarily single-purpose military model aircraft used by air tanker bosses to direct and control the dropping of retardants on forest fires by contract air tankers. These are to be replaced with light twins to provide two-engine safety.

One light twin-engine airplane is modified, equipped, and used primarily for fire mapping with infrared equipment in low visibility of smoke and at night.

The multi-engine airplane obtained from the military was converted to air tanker configuration for test and evaluation project to determine if suitable for dropping retardants. On project completion it will be used for training purposes.

The multipurpose reconnaissance and transport airplanes are used primarily to transport smokejumpers, firefighters, administrative personnel, equipment and supplies to remote and inaccessible areas where commercial services are inadequate or not available for protection and suppression of forest fires. Other use is to locate and survey timber stand and vegetation conditions such as insect infestations, blowdown, diseased areas, undesirable species, and to appraise resources and damage and evaluate effectiveness of control.

One medium twin-engine is modified, equipped and used primarily for high altitude fire detection usually at night with infrared equipment.

The replacements by purchase will be primarily light and medium twin-engine airplanes. They will be utility airplanes that may be used for several purposes but primarily for providing essential service in dropping smokejumpers and paracargo and lead planes directing contract air tankers. The airplanes will be new, standard manufacture airplanes to upgrade with greater efficiency and utility some of the old military surplus aircraft currently providing essential services. These replacements will provide more effective operations with greater safety margin. The Forest Service aircraft are operated to a large extent over rough, mountainous terrain in turbulent air conditions, and from unimproved landing fields.

Four heavy twin-engine transport airplanes are leased and operated for dual purpose in transporting firefighting crews or dropping smokejumpers. Three leased light twins fill additional requirements for lead planes in directing air tanker retardant attack on fires.

The services of suitable airplanes to perform Forest Service missions are becoming increasingly more difficult to obtain from commercial sources. In most locations only the Forest Service needs the type of flights and they are insufficient in number to warrant furnishing the service. Aviation operators must therefore give first consideration to furnishing services for best revenue. In many instances the aircraft available is not suitable for Forest Service work.

Although a policy does not permit transfer, the Navy Department has made available twenty-five Lockheed SP-2E airplanes on loan. This is the make and model the Forest Service tested and determined suitable for dropping retardants on fires. The plan is to have the airplanes converted and operated by qualified commercial aviation firms under government furnished equipment contract as needed. Two single-engine T-28's on loan from the Navy are used as air tanker lead planes especially where faster speed is needed.



Medium and heavy cargo and transport airplanes are needed to meet requirements as a result of rapidly diminishing number available from supplemental air carriers and other commercial sources. The transport type may be obtained and other aircraft currently in use be replaced as newer or more suitable models and types become available from military services as excess property.

Aircraft purchases are financed from either appropriated funds or the Forest Service Working Capital Fund, or a combination of both. Replacement costs of aircraft partially or completely destroyed in a crash accident are financed from program funds in relationship to anticipated use.

Change 3 would provide use of benefiting funds appropriated to the Forest Service to carry out the Volunteers in the National Forests program pursuant to PL 92-300, approved May 18, 1972.



ROADS AND TRAILS FOR STATES, NATIONAL FORESTS FUND

(Permanent appropriation)

Appropriation, 1972	\$22,661,542
Appropriation, 1973	33,871,106
Budget estimate, 1974	40,900,000
Increase (due to an estimated increase in National Forest receipts in fiscal year 1973)	+7,028,894

The permanent appropriation of 10 percent of National Forest receipts pursuant to the Act of March 4, 1913 (16 USC 501) is transferred to and merged with the annual appropriation for Forest Roads and Trails. The explanation of the use of these funds is included in the justification for that appropriation item.

EXPENSES, BRUSH DISPOSAL
(Permanent appropriation)

Appropriation, 1972	\$18,008,351
Budget estimate, 1973	18,000,000
Budget estimate, 1974	<u>18,000,000</u>

PROJECT STATEMENT

Project	:		:		Increase
	1972	1973	estimate	1974	or decrease
Brush disposal	\$16,182,780	\$18,328,000		\$19,157,000	+\$829,000
Unobligated balance brought forward	-17,060,396	-18,885,967		-18,557,967	+328,000
Unobligated balance carried forward		18,885,967	18,557,967	17,400,967	-1,157,000
Appropriation or estimate	18,008,351	18,000,000	18,000,000		-

Timber cutting normally increases the fire hazard because of dry fuel increase in the form of logging slash. This slash may also:

- (1) Impair reforestation.
- (2) Contribute to the buildup of insect populations.
- (3) Cause damage to stream channels.
- (4) Degrade esthetics of the forest environment.

The objective of this program is the disposal of brush and other debris resulting from timber sale operations. When disposal is necessary National Forest timber sale contracts require treatment or deposit of funds for treatment of debris from cutting operations. When economical and expedient the work is performed by the timber purchaser. When not done by the purchaser, it is done by the Government, using deposits to cover costs of the work as authorized under Section 6 of the Act of April 24, 1950 (16 USC 490).

The effect of timber cutting and the manner of treating slash vary widely among regions. Brush disposal may be accomplished in several ways such as crushing, chipping, burning, or extra fire protection through the critical phase of natural disposal. Combinations of these are often used.

In the Eastern Regions, low volume cut per acre, high utilization, and rapid decomposition reduce the slash disposal work necessary. Exceptions occur in sales where a heavy cut per acre is made, such as the jack pine stands of Minnesota. In such areas, slash is crushed and mixed with mineral soil by disking with heavy equipment. This reduces the hazard and provides a good seedbed to aid regeneration. Treatment of slash to prevent insect epidemics is sometimes necessary in these areas.

In contrast, more slash disposal is required on most sale areas of the West. High volumes per acre generally produce heavy slash. Long dry periods with lightning and man-caused fire risk result in extremely hazardous fire potential. The warm, humid conditions necessary for rapid slash deterioration seldom occur. Treatment varies greatly with different methods of cutting, but generally requires some burning to reduce volumes of slash fuels. Slash may be burned in place or piled and burned under varied weather conditions. Fuel arrangements are planned which allow burning at times when smoke dispersal is favorable and will not influence air quality in population areas.

Within regions, slash disposal follows general prescriptions. Individual needs of each sale are planned and appraised prior to advertisement of the sale. The appropriate specific requirements are incorporated into each timber sale contract. In each instance, the method used will require adequate ecological, environmental, and resource protection at the least expense.

FOREST FIRE PREVENTION
(Permanent appropriation)

Appropriation, 1972				\$211,071
Budget estimate, 1973				215,000
Budget estimate, 1974				<u>250,000</u>
Increase				<u>+35,000</u>

PROJECT STATEMENT

Project	1972	estimate	1974	estimate	decrease
Forest fire prevention	\$152,826	\$261,000	\$275,000	+\$14,000	:
Unobligated balance brought forward ..	-122,081	-180,326	-134,326	+46,000	or
Unobligated balance carried forward ..	180,326	134,326	109,326	-25,000	:
<u>Appropriation or estimate</u>	<u>211,071</u>	<u>215,000</u>	<u>250,000</u>	<u>+35,000</u>	:

The Smokey Bear licensing program is an important part of the Cooperative Forest Fire Prevention Campaign, and accomplishes its purpose through dissemination to the public of Smokey Bear's forest fire prevention message on commercial products licensed by the Chief of the Forest Service, and by support of the Smokey Bear Junior Forest Rangers, exhibits, and the Smokey Bear awards program through contribution of fees and royalties by licensees. Among the educational items presently available under this authority are books, games, bookcovers, television shows, Viewmaster reels, litterbags, children's clothing, musical recordings, and exhibits, to name a few. These items carry the forest fire prevention message to millions of Americans each year.

Examples of Recent Accomplishments

- (1) Appointment of more than 230,000 Junior Forest Rangers, with each receiving his kit at home in response to his personal card or letter to Smokey Bear Headquarters.
- (2) Development of a Smokey Bear float for the 1973 Rose Parade (in cooperation with the Native Sons and Daughters of the Golden West), which will be seen by 100 million TV viewers on two networks.
- (3) Display of over 93,600 cards on forest fire prevention in buses and commuter trains in all major metropolitan areas.
- (4) Production and distribution of other mass media materials that resulted in the donation of time and space that would have cost a commercial advertiser \$31.6 million.

RESTORATION OF FOREST LANDS AND IMPROVEMENTS
(Permanent appropriation)

Appropriation, 1972				<u>\$12,220</u>
Budget estimate, 1973				50,000
Budget estimate, 1974				<u>50,000</u>

PROJECT STATEMENT

Project	1972	1973	1974	Increase or decrease
	estimate	estimate	estimate	
Restoration of forest lands and improvements	\$9,030:	\$50,000:	\$50,000:	---
Unobligated balance brought forward	-5,588:	-8,778:	-8,778:	---
Unobligated balance carried forward	<u>8,778:</u>	<u>8,778:</u>	<u>8,778:</u>	---
Appropriation or estimate ..	12,220:	50,000:	50,000:	---

Recoveries from cash bonds or forfeitures under surety bonds by permittees or timber purchasers, who fail to complete performance of improvement, protection, or rehabilitation work required under the permit or timber sale contract, are used to cover the cost to the United States of completing such work on lands under Forest Service administration. Funds received as settlement of a claim are used for improvement, protection, or rehabilitation made necessary by the action which led to the cash settlement (Act of June 20, 1958, 16 USC 579c).

PAYMENT TO MINNESOTA (COOK, LAKE, AND ST. LOUIS COUNTIES)
FROM THE NATIONAL FORESTS FUND
(Permanent appropriation)

Appropriation, 1972	\$259,038
Appropriation, 1973	259,038
Budget estimate, 1974	<u>259,038</u>

PROJECT STATEMENT

Project	:	1972	1973	1974	: Increase or : estimate : estimate : decrease
Payment to Minnesota from the National Forests Fund (total available or estimate)	:	:	:	:	
		\$259,038	\$259,038	\$259,038	--

The Act of June 22, 1948, as amended (16 USC 577c-577h) provides that the Secretary of the Treasury, upon certification of the Secretary of Agriculture, shall pay to the State of Minnesota at the close of each fiscal year from any National Forest receipts not otherwise appropriated an amount equivalent to three-fourths of one percent of the fair appraised value of certain National Forest lands in the counties of Cook, Lake, and St. Louis situated within the Superior National Forest. The Act further provides that payment to the State shall be distributed to each of these counties in conformity with the fair appraised value of such National Forest lands in each county.

PAYMENTS TO COUNTIES, NATIONAL GRASSLANDS
(Permanent appropriation)

Appropriation, 1972	\$529,502
Budget estimate, 1973	523,750
Budget estimate, 1974	548,750
Increase	<u>+\$25,000</u>

PROJECT STATEMENT

Project	: 1972	: 1973 estimate	: 1974 estimate	: Increase or decrease
Payment to counties (appropriation or estimate)	: \$529,502	: \$523,750	: \$548,750	: <u>+\$25,000</u>

At the end of each calendar year, 25 percent of the revenues from use of submarginal lands are paid to counties under the provisions of Title III of the Bankhead-Jones Farm Tenant Act, approved July 22, 1937 (7 USC 1012). Payments are made on the provision that they are used for school or road purposes, or both.

PAYMENTS TO SCHOOL FUNDS, ARIZONA AND NEW MEXICO
(Permanent appropriation)

Appropriation, 1972	\$69,316
Appropriation, 1973	114,043
Budget estimate, 1974	<u>115,000</u>
Increase (due to an estimated increase in National Forest receipts in fiscal year 1973)	<u>+957</u>

PROJECT STATEMENT

Project	: 1972	: 1973 estimate	: 1974 estimate	: Increase or decrease
Payments to school funds (appropriation: or estimate)	\$69,316	\$114,043	\$115,000	+\$957

Under provisions of the Act of June 20, 1910 (36 Stat. 562, 573) certain areas within National Forests were granted to the States for school purposes. The percentage that these lands are of the total National Forest area within the State is used in determining payments to the States. The receipts from all National Forest land within the State are used as the basis for applying the percentage. For example, if total receipts for the State are \$100,000 and if 10 percent of lands are in the "granted for school purposes" category, the payment to the State would be \$10,000. The amounts so paid are deducted from the net receipts before computing the 25 percent payments to States.

As soon after the close of the fiscal year as the receipts from National Forests and the area of school lands in the States of Arizona and New Mexico are determined, the payments are made to the States. Payments in fiscal year 1973 to Arizona were \$113,212 and to New Mexico \$831.

PAYMENTS TO STATES, NATIONAL FORESTS FUND
(Permanent appropriation)

Appropriation, 1972	\$56,648,064
Appropriation, 1973	84,676,129
Budget estimate, 1974	<u>102,012,000</u>
Increase (due to an estimated increase in National Forest receipts in fiscal year 1973)	<u>+\$17,335,871</u>

PROJECT STATEMENT

Project	: 1972	: 1973 estimate	: 1974 estimate	: Increase or decrease
Payments to States (appropriation or estimate)	\$56,648,064	\$84,676,129	\$102,012,000	+\$17,335,871

The Act of May 23, 1908, as amended (16 USC 500) requires, with a few exceptions, that 25 percent of all money received from the National Forests during any fiscal year be paid to the States in which the forests are located, for the benefit of public schools and public roads of the county or counties in which such National Forests are situated. The amount of this appropriation varies each year in direct proportion to National Forest receipts during the previous fiscal year.

The amounts set aside from receipts collected from the sale of National Forest timber, grazing, special use permits, power, mineral leases, and admission and user fees, before the 25 percent is applied are listed below:

1. Payment to the State of Minnesota covering certain National Forest lands in Counties of Cook, Lake, and St. Louis situated within the Superior National Forest is made under the terms of the Act of June 22, 1948, as amended (16 USC 577c-577h). Receipts collected from the areas covered by this Act are excluded when the 25 percent payment to the State of Minnesota is computed.
2. For lands in certain counties in Utah, Nevada, and California, the States receive 25 percent of receipts only after funds, if made available by Congress, have been set aside for the acquisition of National Forest lands within the specified National Forests under the terms of special acts authorizing appropriations from forest receipts for this purpose.
3. Payments to the States of Arizona and New Mexico under the provisions of the Act of June 20, 1910 (36 Stat. 562, 573), of shares of the gross receipts from the National Forests in those States which are proportionate to the areas of land granted to the States for school purposes within the National Forests.

WORKING CAPITAL FUND

The Working Capital Fund was established by the Act of August 3, 1956 (16 USC 579b), as amended by the Act of October 23, 1962 (16 USC 579b). It is a self-sustaining revolving fund which provides services to National Forests, Experiment Stations, and when necessary, to other Federal agencies, and as provided by law to State and private agencies and persons who cooperate with the Forest Service in fire control and other authorized programs.

The following services were provided by the Working Capital Fund in fiscal year 1972:

1. Equipment service.--This service owns, operates, maintains, and replaces approximately 13,500 pieces of common use motor driven and similar equipment. This equipment is rented to a total of 146 administrative units, i.e., National Forests, Experiment Stations and other units, and in some cases to other agencies, at rates which recover the cost of operation, repair and maintenance, management, and depreciation. The rates also include an increment which provides additional cash which when added to depreciation earnings and the residual value of equipment provides sufficient funds to replace the equipment. This service operates 74 repair shops.
2. Aircraft service.--This service operates and maintains 57 Forest Service owned aircraft used in fire surveillance and suppression and in other Forest Service programs. The aircraft are based at 16 locations and are rented to National Forests, Experiment Stations, and in some cases to other agencies, at rates which recover the cost of depreciation, operation, maintenance, repair, and improvements in the airworthiness of the aircraft. Aircraft replacement costs are financed from either appropriated funds or the Forest Service Working Capital Fund, or a combination of both. This service operates three aircraft maintenance shops.
3. Supply service.--This service operates the following common services:

Central Supply.--This service has two locations for procurement, warehousing, and supply of common use items, such as work project tools, provisions, and supplies. Grass seed is procured, stored and issued from two other locations. Issuances and sales are made to National Forests, Experiment Stations, and others at prices which recover cost.

Photo reproduction.--Six photo reproduction laboratories store, reproduce, and supply aerial photographs, aerial maps, and other photographs of National Forest lands. The photographic reproductions are sold to National Forests, Experiment Stations, and others at cost.

Sign shop.--These include four small shops which manufacture and supply special signs for the National Forests for use in regulating traffic and as information to the public and other users of the National Forests. The signs are sold to National Forests and Experiment Stations at cost.

Subsistence.--There are 26 facilities which prepare and serve meals at cost to Forest Service work crews working in remote areas where adequate public restaurant facilities are not available.

Cribbing.--This facility is located on the Angeles National Forest, California to manufacture special concrete structural material used in embankments for erosion control purposes along access roads in the National Forests. This material is sold to National Forests at prices which recover costs.

4. Nurseries.--This service operates 13 forest tree nurseries and cold storage facilities for storage of tree and seed stock and one seed extractory. Tree seed is procured, cleaned, bagged, and stored in refrigerated facilities. Tree and seed stock is sold to National Forests, States, and other Federal agencies at cost.

Volume of Business for the Various Major Activities
of the Working Capital Fund

(In thousands)

	<u>1972</u> <u>Actual</u>	<u>1973</u> <u>Estimate</u>	<u>1974</u> <u>Estimate</u>
Equipment service	\$25,663	\$26,285	\$27,658
Aircraft service	1,192	1,414	1,497
Supply service	2,867	2,461	2,393
Nursery service	<u>3,260</u>	<u>3,523</u>	<u>3,548</u>
Totals	32,982	33,683	35,096

The Working Capital Fund requires no cash appropriation. Initially, its assets were purchased by regular Forest Service appropriations and were donated to the fund. Where expansion of facilities is required that expansion is financed by Forest Service regular appropriations and the resulting assets are donated to the fund.

COOPERATIVE WORK, FOREST SERVICE (TRUST FUND)

Contributions are received from cooperators, including counties, States, timber sale operators, individuals, and associations, and are expended by the Forest Service in accordance with the terms of the applicable cooperative agreements. The work consists of protection and improvement of the National Forests, work performed for National Forest users, and forest investigations and protection, reforestation, and administration of private forest lands.

The major programs conducted under this account are described below in terms of the projects reflected in the statement at the end of this section.

1. Construction and Maintenance of Roads and Trails, and
2. Construction and Maintenance of Other Improvements.

Under the Acts of June 30, 1914 (16 USC 498) and March 3, 1925, April 24, 1950 (16 USC 572) and October 13, 1964 (16 USC 537) deposits for cooperative work are accepted from State and local government agencies, associations, Federal timber purchasers, users of roads, and others for the construction and maintenance of roads, trails, and other improvements and for performing work which is the National Forest users' responsibility, this method of performance of the work being of mutual benefit or of benefit to the public at large. Cooperative deposits received for wildlife habitat improvement for States from their hunting and fishing fees are included in this activity.

3. Protection of National Forest and Adjacent Non-Federal Lands. The Act of June 30, 1914 (16 USC 498) authorizes the acceptance of contributions for the protection of the National Forests and the Act of March 3, 1925, as amended by Section 5, Act of April 24, 1950 (16 USC 572), authorizes the acceptance of deposits for the protection of non-Federal lands in or near the National Forests. The major portion of the obligations is for the protection of private lands from fire. This arrangement helps both parties since there are millions of acres of non-Federal forest land intermingled with Federal ownership on the National Forests. The lands in non-Federal ownership are usually in small tracts. It would be uneconomical for the owner to set up a fire control organization for the protection of his land. The advantage to the Government is that in many cases it would be necessary to suppress the fires on the non-Federal land without reimbursement in order to protect the adjoining Federal land.
4. Sale Area Betterment (including reforestation). Section 3 of the Act of June 9, 1930 (16 USC 576b) provides for deposits of funds by timber sale purchasers to cover the cost of reforestation and special cultural measures to improve the future stand of timber on the areas cutover by the purchaser. Accomplishments under this program are reported under the Forest land management subappropriation along with accomplishments for reforestation and stand improvement for that subappropriation.
5. Scaling. Under provisions of the Act of April 24, 1950 (16 USC 572) and of Section 210 of the Act of September 21, 1944 (16 USC 572a) acceptance of deposits from timber purchasers for cooperative scaling service is authorized. Such arrangements are established only when requested by the operator and when the operator pays the extra cost of such services, either in advance or through reimbursement under appropriate payment guarantees.
6. Research Investigations. The Acts of June 30, 1914 (16 USC 498) and May 22, 1928 (16 USC 581i-1) authorize the acceptance of deposits for forestry research. Deposits are received from State and other public agencies, and from industrial, association, and other private agencies to finance research projects of mutual interest and benefit to both parties. The deposits may be made either in a single sum or on a continuing basis, and may either partially or wholly cover the cost of the research. The cooperative research

projects may involve any aspect of forestry and vary widely as to scope and duration. A very common example of such cooperation is for a State to make a deposit to the Cooperative work fund in order to intensify or to speed up completion of a comprehensive survey of the forest resources of the State. Other examples are State contributions toward forest fire research. The results of such cooperative investigations are made available to the general public as well as to the depositor.

7. Administration of Non-Federal Lands. The Act of March 3, 1925, as amended by Section 5, Act of April 24, 1950 (16 USC 572) authorizes the acceptance of deposits for the administration of non-Federal lands. These deposits are made by non-Federal owners having land intermingled with or adjacent to National Forests who wish these lands managed in accordance with good forest management practices. Their holdings are usually too small to warrant the employment of professional foresters to administer such tracts. The advantages to the Government include the avoidance of possible high fire hazard areas resulting from improper cutting practices, the elimination of the necessity of precisely marking the boundaries of the private land, and additional private forest land handled under proper forest practices.
8. Reforestation (private lands). The Act of March 3, 1925, as amended by Section 5, Act of April 24, 1950 (16 USC 572) authorizes the acceptance of deposits for reforestation of non-Federal lands situated within or near a National Forest. This work is limited to areas of non-Federal land within a planting project on the National Forests or to areas in which certain civic and other public-spirited organizations have taken an interest.
9. Statement on Utilization of Funds. Following is a statement of funds received and obligated and balances available by major activities:

COOPERATIVE WORK, FOREST SERVICE --Trust Fund

Project	Actual Fiscal Year 1972		Estimate Fiscal Year 1973		Estimate Fiscal Year 1974	
	Balance	Funds Received	Funds Received	Obligations	Balance	Funds Received
1. Construction and maintenance of roads and trails	\$5,019,255:	\$7,747,429:	\$6,076,133:	\$6,690,551:	\$7,750,000:	\$6,535,000:
2. Construction and maintenance of other improvements	655,397:	837,030:	731,363:	761,064:	840,000:	800,000:
3. Protection on National Forests and adjacent private land:						
(a) Fire	415,546:	2,548,471:	2,374,129:	589,888:	2,550,000:	2,550,000:
(b) Other	2,356,820:	2,521,934:	2,271,191:	2,607,563:	2,546,000:	2,540,000:
4. Sale area betterment on National Forest lands (including reforestation) ..	49,370,430:	38,133,374:	30,557,355:	56,946,447:	38,200,000:	32,587,000:
5. Scaling of timber	229,530:	1,259,447:	1,242,832:	246,145:	1,300,000:	1,135,000:
6. Research Investigations	251,889:	702,611:	709,438:	245,062:	700,000:	800,000:
7. Administration of private lands	26,760:	81,674:	86,715:	21,719:	80,000:	90,000:
8. Reforestation (private lands)	106,886:	41,590:	33,203:	115,271:	40,000:	50,000:
Total	58,432,511:	53,873,560:	44,082,361:	68,223,710:	54,000,000:	47,797,000:

NOTE: Balances carried forward are due primarily to necessity of deferring work for which funds are deposited until the most practicable time for accomplishment. For instance, funds for sale area betterment are received in advance of timber cutting, but work cannot be started until cutting operations are completed. The time lag sometimes extends for several years, depending on the amount of preparatory work required in the sale area and weather conditions.

Above obligations for 1972 include refunds to cooperators in the amount of \$235,254.

